Expanded Site Inspection
Final Report

Pullman Factory
Chicago, Illinois
ILD 981 959 208

November 29, 1994

Prepared for:
U.S. Environmental Protection Agency
under Alternative Remedial Contracting Strategy
Contract 68-W8-0064, Work Assignment 33-5JZZ
ARCS Contractor Project 71280.113

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1.0 Introduction

On February 4, 1993, the Alternative Remedial Contracting Strategy (ARCS) contractor was authorized, by approval of the work plan amendment by the U.S. Environmental Protection Agency (USEPA) Region V, to conduct an expanded site inspection (ESI) of the Pullman Factory site in Cook County, Illinois.

The site was initially placed on the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) on June 17, 1987, as a result of a request for discovery action initiated by the USEPA.

The facility received its initial Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) evaluation in the form of a preliminary assessment (PA) report completed by the Illinois Environmental Protection Agency (IEPA) on August 14, 1987. A screening site inspection was completed for the site by IEPA on October 19, 1990 (USEPA 1993). A PA reassessment was completed for the site by an USEPA field investigation team (FIT) contractor on October 29, 1991. The sampling portion of the ESI was conducted on January 19 through 25, 1994, when a field team collected 23 soil samples.

The purposes of the ESI have been stated by USEPA in a directive outlining site inspection performed under CERCLA. The directive states:

> The objective of the ESI is to provide documentation for the Hazard Ranking System (HRS) package to support National Priority List (NPL) rulemaking. Remaining HRS information requirements are addressed and site hypotheses not completely supported during previous investigations are evaluated. ESI sampling is designed to satisfy HRS data requirements by documenting observed releases, observed contamination, and levels of actual contamination at targets. In addition, investigators collect remaining non-sampling information. Sampling during the ESI includes background and quality assurance/quality control samples to fully document releases and attribute them to the site. Following the ESI, USEPA site assessment managers assign the site a priority for HRS package preparation and proposal to the NPL.

USEPA Region V also requested identification of sites during the ESI that may require removal action to remediate an immediate human health or environmental threat.

2.0 Site Background

2.1 Introduction

This section includes information obtained during the ESI and from reports of previous site activities.

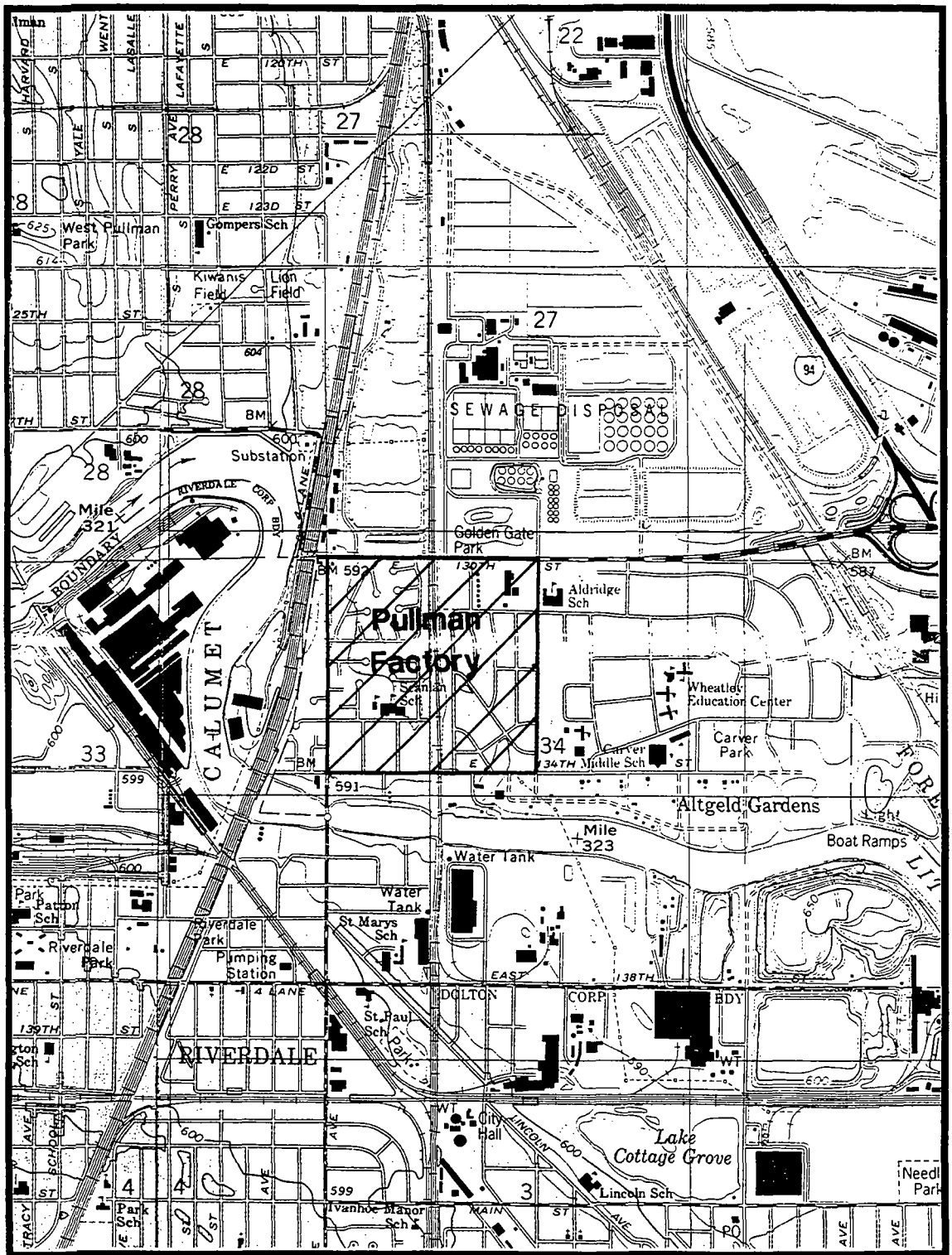
2.2 Site Description

The Pullman Factory site, also referred to as the Pullman Sewage Farm, is located near the Little Calumet River in southeastern Chicago. The 140-acre tract is in the northwestern quarter of Section 34, Township 37 North, Range 14 East in Cook County, Illinois. It is bounded by Indiana Avenue to the west, 130th Street to the north, 134th Street to the south, and St. Lawrence Avenue to the east. Figure 2-1 shows the site location. Appendix A shows the 15-mile surface water route map.

The land that comprised the Pullman Factory site is now a developed residential area, which includes two apartment complexes, many single family residences, a school, and a food distributor. Figure 2-2 is a site sketch.

Paved public streets intersect the site, making it readily accessible. A power line right-of-way and the Chicago and Western Indiana Railroad also intersect the site. Surface drainage flows into municipal storm water sewers. The site is located outside the 500-year floodplain (Federal Emergency Management Agency 1981).

Surrounding land use is primarily residential and industrial. The Metropolitan Water Reclamation District of Greater Chicago, Calumet Water Reclamation Plant, is north of the site. The Little Calumet River wraps around the site to the south and west, approximately 400 to 1,300 feet from the site boundaries. Between the western site boundary and the Little Calumet River are houses, apartments, and the Illinois Central Gulf Railroad. Industrial establishments are west of the Little Calumet River. Scattered residences and several small garden plots are in the area between the southern site boundary and the Little Calumet River. The Skipper's Marina is also south of the site on the Little Calumet River. East of the site is the Altgeld Gardens public housing development.



Source: USGS 7.5' Topographic Maps Lake Calumet (1991) and Blue Island (1973) Quadrangles	N	Figure 2-1 Site Location Map
Scale: 0 1/2 mile		Pullman Factory Chicago, Illinois

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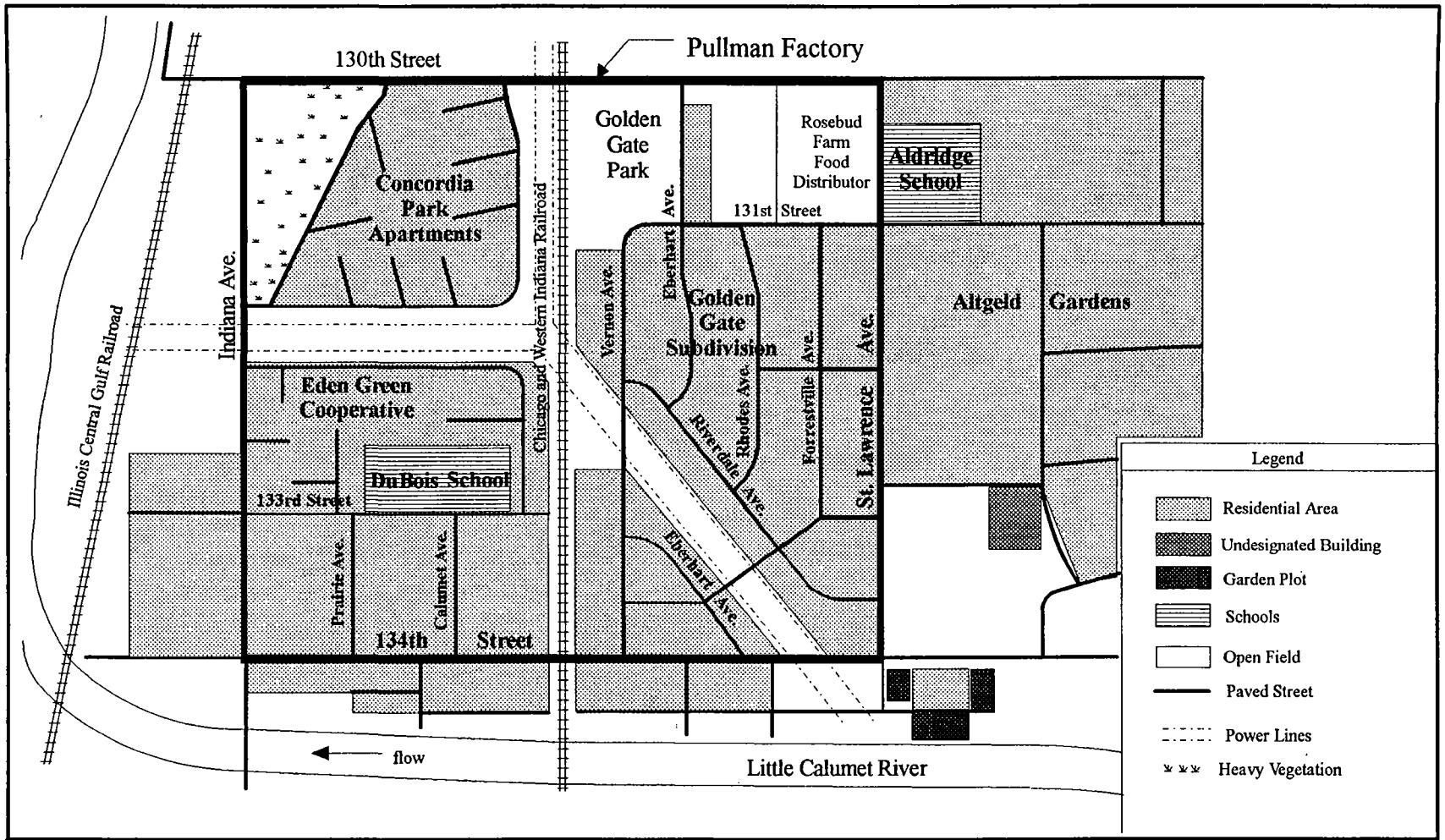

Source:	Modified from USGS Topographic Map Lake Calumet (1991) Quadrangle	N	Figure 2-2 Site Sketch
Scale:	Not to scale		Pullman Factory Chicago, Illinois

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2.3 Site History

2.3.1 Operational History

The site was used for the disposal of untreated industrial and domestic sewage from 1881 to approximately 1907 under the ownership of the Pullman Land Association (Engineering News 1882; Colten 1985). Wastes consisted mainly of municipal sewage from the Town of Pullman (located approximately three miles north of the site) and industrial wastes from shops associated with the Pullman railcar factory. Liquid wastes from the Calumet Paint Company, later known as Sherwin-Williams, were presumably also handled by the Pullman sewage system (Colten 1985). According to a book on the town of Pullman, the sewage was spread over the 140-acre field using pumps, piping, and hydrants and allowed to infiltrate through the soil. This process supposedly filtered out impurities in the sewage. Filtered fluids flowed into underdrains and then to ditches that emptied into Lake Calumet (Doty 1893).

Crops were simultaneously grown onsite. Spreading the sewage over the field was viewed as a means of irrigating and fertilizing the soil to help crops, such as onions, potatoes, cabbage, celery, beets, carrots, sweet corn, and squash grow.

By 1887, however, unfiltered sewage frequently was being emptied directly into Lake Calumet to save the crops (Engineering News 1893). The sewage farm eventually was abandoned and, by 1907, untreated sewage was discharged directly into the Little Calumet River (Colten 1985).

The land that comprised the Pullman Factory site is now a developed residential area. A school and a food distributor are also located onsite. Interim site use from the time the sewage farm ceased operations to development of the residential area is unknown.

2.3.2 Summary of Onsite Environmental Work

IEPA completed a PA report for the Pullman Factory site in 1987, including USEPA Form 2070-12. A medium priority rating was assigned based on available data. Groundwater, surface water, and soil were identified as either potentially or allegedly contaminated (IEPA 1987).

IEPA completed a screening site inspection (SSI) report for the site in 1990. A total of 20 soil samples were collected and submitted to IEPA laboratories for full Target Compound List (TCL) and Target Analyte List (TAL) analyses. Sixteen of the samples were collected from onsite locations, at depths ranging from 0 to 6 feet below ground surface. Analytical results revealed the presence of low levels of volatile organic compounds, semivolatile organic compounds, pesticides, and

inorganics in the site soils (IEPA 1990). Most samples did not meet the criteria necessary to establish a target population.

A USEPA field investigation team (FIT) contractor conducted a PA reassessment for the site in October 1991. The reassessment indicated the need for further evaluation of the site (Ecology and Environment, Inc. 1991).

2.4 Applicability of Other Statutes

No record of Resource Conservation and Recovery Act (RCRA) activity concerning the site or reference to other statutes, other than CERCLA, has been found. The site is not listed on the Region V RCRA notifiers list for Illinois (USEPA 1994).

3.0 Site Inspection Activities and Analytical Results

3.1 Introduction

This section outlines the procedures used and observations made during the ESI conducted at the Pullman Factory site. Sampling activities were conducted in accordance with the project's approved Quality Assurance Project Plan (QAPjP). Figure 3-1 shows sample locations; Table 3-1 summarizes sample descriptions and locations.

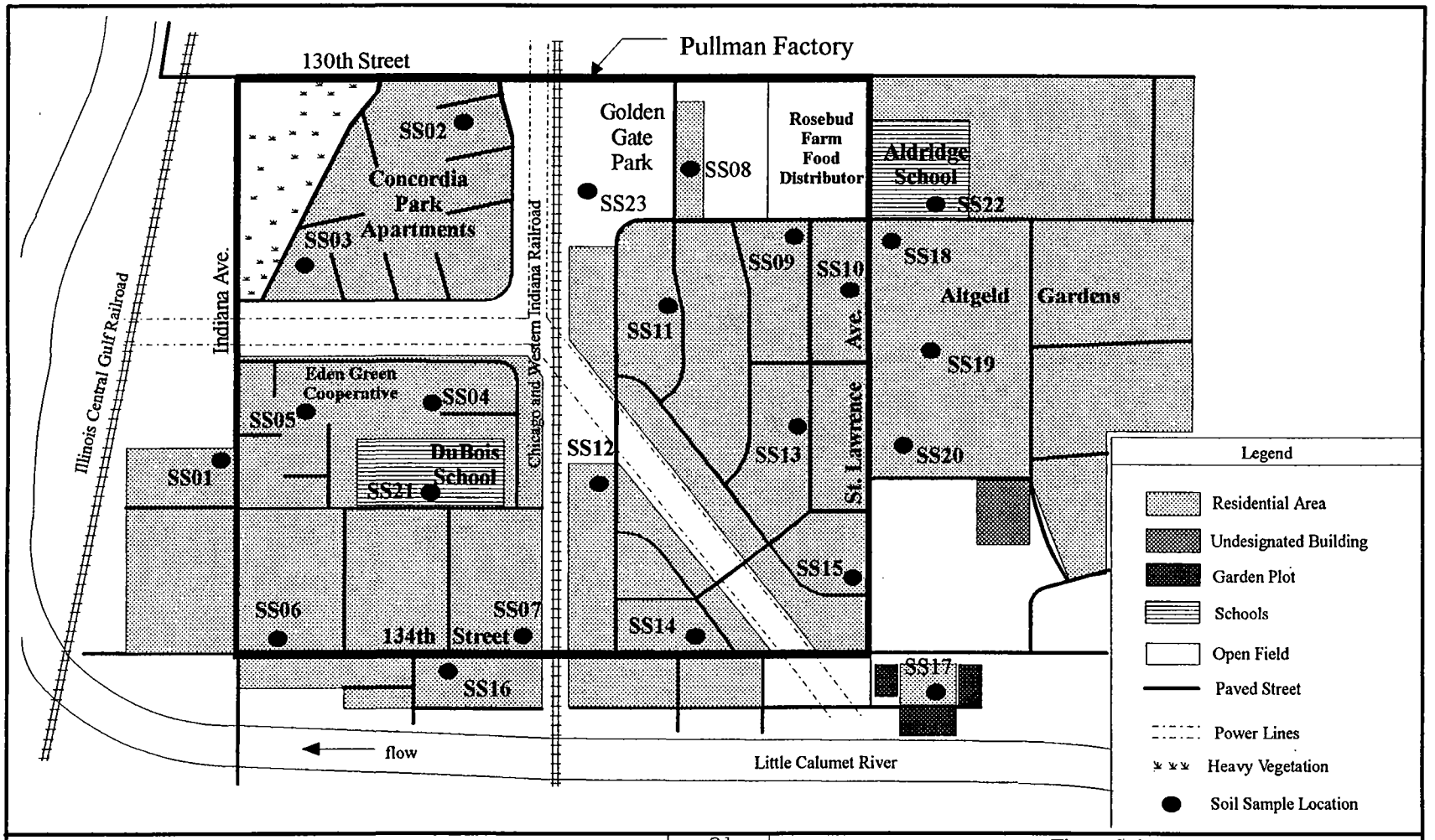
ESI samples were analyzed for organic and inorganic substances contained on the USEPA Target Compound List (TCL) and Target Analyte List (TAL) by USEPA contract laboratory program (CLP) participant laboratories. Appendix B presents the TCL and TAL. Appendix C presents a summary of analytical data generated by ESI sampling. Appendix D contains photographs of the site and sample locations.

3.2 Site Reconnaissance

A field reconnaissance of the Pullman Factory site was conducted on August 13, 1993. This visit included a visual site inspection to determine the status, facility activities, health or safety hazards, and potential sampling locations. A USEPA representative accompanied the field team on the visit.

The field team and the USEPA representative visited the office of the People for Community Recovery Environmental Organization (PCR) in the Altgeld Gardens neighborhood. PCR is a citizen organization addressing environmental issues in the Altgeld Gardens public housing area. The field team was to meet Cheryl Johnson, one of the PCR coordinators, and representatives from the Chicago Housing Authority (CHA) at that location so that these officials could provide information to help pinpoint locations where sampling might be warranted. However, after waiting approximately fifteen minutes, a PCR office attendant informed the field team that Ms. Johnson would be unable to meet with them that day.

CHA owns the Altgeld Gardens property. Michael Roeder and John Lapinski of the CHA Construction Management Branch met with the field team; however, after review of a map obtained by the CHA representatives from the Altgeld Management Office, it was determined that the Pullman Factory site is located adjacent to the western boundary of Altgeld Gardens, not on Altgeld Gardens pro-



Source:	Modified from USGS Topographic Map Lake Calumet (1991) Quadrangle	N	Figure 3-1 Sample Location Map Pullman Factory Chicago, Illinois
Scale:	Not to scale		

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Table 3-1
Sample Descriptions

Sample No.	Depth	Appearance	Location
SS01	8 to 14 inches	Black to brown silt with some clay and sand	Offsite background location near southwest corner of 132nd Street and Indiana Ave., on Eden Green Cooperative property. Approx. 32 ft north by northwest of the nearest apartment building to the south, and 110 ft east of the nearest apartment building to the west.
SS02	7 to 12 inches	Brown to black clayey silt	Northeast section of Concordia Park Apartments property, between a small play area and an open field used by residents, approx. 67 ft northeast of the northwest corner of the northeasternmost apartment building on the property.
SS03	8 to 14 inches	Brown to black silt	Southwest section of Concordia Park Apartments property, in an open field used by residents, near a small play area, approx. 65 ft southeast of the southwest corner of the southwesternmost apartment building on the property.
SS04	8 to 14 inches	Brown to black silt with some sand	Eden Green Cooperative property, in a common area accessible to all residents. Approx. 4 ft south of the southwest corner of the Jerry Poore Community Building (also the management office), next to a playground and basketball court. Apartments are approx. 138 ft northwest and 75 ft north and southeast of sample location.
SS05	8 to 14 inches	Black silt with some sand	Eden Green Cooperative property, east of the intersection of 132nd Street and Indiana Ave., behind an Eden Green Cooperative sign. Apartments are approx. 78 ft north, 84 ft southwest, and 35 ft southeast of the sample location.

Table 3-1 (Continued)
Sample Descriptions

Sample No.	Depth	Appearance	Location
SS06	10 to 16 inches	Black silt with some gravel and brick fragments	Front lawn of residence along 134th Street, near southwest corner of the site, approx. 16 ft southeast of the southeast corner of the house.
SS07	8 to 14 inches	Black silt with some sand	Front lawn of residence along 134th Street, in south-central portion of the site, approx. 47 ft east of the southeast corner of the house.
SS08	8 to 12 inches	Black to brown silt with some sand	Front lawn of residence along Eberhart Ave., in northeast section of the site, approx. 10 ft southwest of the front entrance of the house.
SS09	7 to 12 inches	Black to brown silt with some clay and sand	Front lawn of residence along Forrest-ville Ave., in northeast section of the site, approx. 13 ft east of the southeast corner of the house.
SS10	6 to 12 inches	Black to brown silt with some clay and sand	Front lawn of residence along St. Lawrence Ave., in northeast section of the site, approx. 5 ft southeast of the northeast corner of the house.
SS11	8 to 14 inches	Black to brown silt with some clay and sand	Front lawn of residence along Eberhart Ave., in the central portion of the site, approx. 7 ft southeast of the southeast corner of the house.
SS12	6 to 9 inches	Grey silty clay with some gravel	Middle of front lawn of residence along Vernon Ave., in central portion of the site, approx. 12 ft east of the house.
SS13	12 to 16 inches	Brown to black silt with clay and sand	Front lawn of residence along Forrest-ville Ave., in southeast section of the site, approx. 5 ft southeast of the southeast corner of the house.
SS14	7 to 12 inches	Brown silt with gravel and some brick fragments	Residence along 134th Street, in southeast section of site, southeast corner of front lawn, approx. 19 ft south of the front entrance of the house.

Table 3-1 (Continued)
Sample Descriptions

Sample No.	Depth	Appearance	Location
SS15	9 to 15 inches	Brown sandy silt with some gravel	Front lawn of residence along St. Lawrence Ave., in southeast section of the site, approx. 30 ft southeast of the southeast corner of the house.
SS16	8 to 14 inches	Brown clayey silt	Side lawn of residence along 134th Street, just outside the southern site boundary, approx. 20 ft east by northeast of the house, next to bushes.
SS17	8 to 14 inches	Black silt with ash and cinder (fill)	Front lawn of residence along 134th Place, just outside the southeast corner of the site, approx. 25 ft south of the front entrance of the house, east of walkway. Small garden plots are to the west, east, and south of the house.
SS18	6 to 12 inches	Brown to beige silt with some gravel	On Altgeld Gardens property east of the site. Lawn at southeast corner of St. Lawrence Ave. and 131st Street, approx. 22 ft northwest of the northwest corner of the northwesternmost Altgeld Gardens apartment building.
SS19	12 to 16 inches	Brown to black clayey silt	On Altgeld Gardens property east of the site, in the middle of an open field surrounded by apartment buildings, east of the intersection of 132nd Street and St. Lawrence Ave. Basketball courts are north and south, and a small playground is east of the field. Approx. 157 ft north of northeast corner of apartment building on the southwest end of the field.
SS20	12 to 16 inches	Grey to brown silty clay with sand	On Altgeld Gardens property east of the site, at the south end of a courtyard surrounded by apartment buildings. Approx. 21 ft north of the southernmost apartment building.

Table 3-1 (Continued) Sample Descriptions			
Sample No.	Depth	Appearance	Location
SS21	7 to 12 inches	Black silt with some sand	Front lawn of W.E.B. DuBois Public School, in southwestern section of the site, approx. 37 ft southeast of the school entrance.
SS22	10 to 15 inches	Black silt with trace gravel (hard pan)	Front lawn of Ira F. Aldridge Elementary School, east of the site, approx. 35 ft southwest of the southeast school entrance.
SS23	8 to 14 inches	Black to brown silt with some sand	Southwest section of Golden Gate Park, north-central portion of the site, between a playground and a basketball court, approx. 19 ft north and 7 ft west of a water fountain.

perty. The CHA representatives then decided not to join the field team on the reconnaissance.

The field team and the USEPA representative began the reconnaissance by driving through the site, stopping at various locations to assess and document site conditions. Exact site boundaries were not evident during the reconnaissance because extensive development has occurred. The land where the Pullman Factory site was located has been developed into a residential neighborhood. The Golden Gate subdivision, which is in the eastern half of the site, consists mostly of privately owned residential homes. The western half of the site is also residential, with the Concordia Park apartment complex in the northwestern section and the Eden Green Cooperative apartment complex and residential homes in the southwestern section.

Several schools are on or close to the site. The W.E.B. DuBois Public School is located near the intersection of 133rd Street and Calumet Avenue in the southwestern section of the site. The Ira F. Aldridge Elementary School is located east of St. Lawrence Avenue, just outside the site boundaries, along 131st Street. The Carver Primary School is also located approximately one-third mile east of the site.

Golden Gate Park, an open field, and the Rosebud Farm Food Distributor are located in the northeastern section of the site, between 130th and 131st Streets.

Many paved public streets intersect the site. A power line right-of-way and the Chicago and Western Indiana Railroad also intersect the site. An abandoned railroad right-of-way cuts across the northwestern corner of the site; the railroad has been removed and the area is overgrown with vegetation.

The site topography is relatively flat with no depressions. The open field in the northeastern section of the site is a low lying area. No stressed vegetation was noted during the reconnaissance. Surface drainage flows into municipal storm water sewers.

3.3 Site Representative Interview

No one familiar with the sewage disposal and farming operations at the former facility was available for an interview.

A meeting was held at the PCR office on August 6, 1993, to explain the USEPA site assessment process and listen to PCR's concerns regarding environmental issues in the Altgeld Gardens area. It was also anticipated that the PCR personnel would be able to point out potential sampling locations. Present at the meeting were three PCR representatives, two USEPA representatives, and two

ARCS contractor representatives. The Pullman Factory site was not specifically discussed during the meeting, other than to identify it as the area of interest for the ESI, nor were potential sampling locations pinpointed.

3.4 Soil Sampling

From January 19 through 25, 1994, the field team collected 23 soil samples. Because the samples were collected during the winter, a decontaminated pick, chisel, and hammer were used to break through the frozen ground surface. Each sample was then excavated with a clean, stainless steel spoon and placed in a clean sample jar. No duplicate or split samples were collected. Figure 3-1 shows sample locations; Table 3-1 summarizes sample locations and descriptions.

Sampling procedures were conducted in accordance with procedures set forth in the QAPjP. Sample jars were sealed, labeled, packaged, and transported to USEPA CLP participant laboratories. Soil samples scheduled for organic analysis were shipped to Encotec in Ann Arbor, Michigan, on January 21 and 25, 1994. Soil samples scheduled for inorganic analysis were shipped to Southwest Labs of Oklahoma in Broken Arrow, Oklahoma, on January 21 and 25, 1994. Samples were analyzed for TCL and TAL substances under a routine analytical services request.

Reusable sampling and personal protective equipment (PPE) were decontaminated before transport offsite. Disposable sampling and PPE items were discarded in accordance with procedures outlined in the ESI project implementation plan and QAPjP.

ESI soil samples were collected to document potential exposure of resident population targets to hazardous substances in the soil and to delineate site surficial contamination. With the exception of sample SS23, each sample met the following criteria:

- The sample was collected within the property boundaries of the residences, apartments, and schools located on or near the site.
- The sample was collected within a distance of 200 feet from the potential target (i.e., residence).
- The sample was collected within the top two feet of soil.

A background sample, SS01, was collected west of the site near the southwest corner of 132nd Street and Indiana Avenue, on Eden Green Cooperative property. This location was selected as representative of offsite soil conditions in the area.

Fourteen soil samples were collected from onsite potential resident target properties. Soil samples SS02 and SS03 were collected from the Concordia Park Apartments property. Soil samples SS04 and SS05 were collected from the Eden Green Cooperative property. Samples SS02 through SS05 were collected from areas accessible to every resident in the apartment complexes. Samples SS06 and SS07 were collected from single family residences in the southwestern section of the site, along 134th Street. Soil samples SS08 through SS15 were collected from single family residences in the eastern half of the site, which is known as the Golden Gate subdivision.

Soil samples SS16 through SS20 were collected from residential properties just outside the site boundaries to assess whether the surrounding area has been affected by the waste handling and disposal practices used at the former sewage farm. Sample SS16 was collected from a residential property south of the site, along the southern side of 134th Street. Sample SS17 was collected from a residence southeast of the site, where some nearby garden plots are used to grow produce. Samples SS18 through SS20 were collected from the Altgeld Gardens public housing property, just east of the site.

One sample was also collected from each of the schools located on or adjacent to the site to supplement the 1990 SSI sample data. Soil sample SS21 was collected from the W.E.B. DuBois Public School property and soil sample SS22 was collected from the Ira F. Aldridge Elementary School.

The last sample, SS23, was not collected on a residential property or within 200 feet from a residence, apartment complex, or school; the sample was collected from Golden Gate Park in the northern portion of the site to determine whether children using the park for recreation are exposed to hazardous substances.

Permission was obtained from each property owner before proceeding with sample collection.

3.5 Analytical Results

This section summarizes analytical results from ESI samples. Appendix C presents ESI analytical data.

The analytical results revealed the presence of low levels of several volatile organic compounds, semivolatile organic compounds, pesticides, and inorganic analytes in the soil samples. Toluene, ethylbenzene, and xylene were detected in several samples at concentrations less than or equal to 10 ug/kg.

Polynuclear aromatic hydrocarbons (PAHs) and phthalates were the most frequently detected semivolatile organic compounds in the soil samples. PAHs were found in all soil samples. Detected PAHs included naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene. However, most reported PAH concentrations were below their respective sample quantitation limit (SQL). Only samples SS01, SS07, SS08, SS11, SS16, SS20, and SS21 had PAH compound concentrations above their respective SQL. Sample SS01, the background sample, contained pyrene at 570 ug/kg. Sample SS07 had eight PAHs with concentrations ranging from 460 to 750 ug/kg; sample SS08 had three PAHs with concentrations ranging from 490 to 790 ug/kg; sample SS11 had three PAHs with concentrations ranging from 510 to 570 ug/kg; sample SS16 had two PAHs with a concentration of 440 ug/kg each; sample SS21 had nine PAHs with concentrations ranging from 450 to 730 ug/kg. Sample SS20 contained the highest concentrations of PAHs, including naphthalene at 860 ug/kg, acenaphthene at 2,000 ug/kg, fluorene at 2,100 ug/kg, phenanthrene at 21,000 ug/kg, anthracene at 3,500 ug/kg, fluoranthene at 23,000 ug/kg, pyrene at 22,000 ug/kg, benzo(a)anthracene at 9,700 ug/kg, chrysene at 12,000 ug/kg, benzo(b)fluoranthene at 7,900 ug/kg, benzo(k)fluoranthene at 11,000 ug/kg, benzo(a)pyrene at 9,000 ug/kg, indeno(1,2,3-cd)pyrene at 4,600 ug/kg, dibenzo(a,h)anthracene at 2,300 ug/kg, and benzo(g,h,i)perylene at 2,900 ug/kg.

Other detected semivolatile compounds included dibenzofuran, carbazole, di-n-butylphthalate, butylbenzylphthalate, and bis(2-ethylhexyl)phthalate. Sample SS20 contained the maximum concentrations for dibenzofuran (960 ug/kg), carbazole (2,400 ug/kg), and di-n-butylphthalate (1,300 ug/kg). Detected butylbenzylphthalate concentrations are all below the SQL for each sample. Sample SS06 contained the maximum concentration for bis(2-ethylhexyl)phthalate at 8,900 ug/kg.

The pesticides most frequently detected in the soil samples are 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT. 4,4'-DDE was detected in all soil samples at concentrations as high as 580 ug/kg. 4,4'-DDT was detected in 22 of the 23 soil samples at concentrations as high as 370 ug/kg. 4,4'-DDD was detected in 12 of the 23 samples at concentrations as high as 78 ug/kg. Less frequently encountered pesticides include beta-BHC (detected in two samples at 4.0 and 2.5 ug/kg), gamma-BHC (detected in two samples at 2.3 and 2.6 ug/kg), heptachlor epoxide (detected in 7 samples at

concentrations as high as 30 ug/kg), dieldrin (detected in 4 samples from 7.5 to 24 ug/kg), endrin ketone (detected in one sample at 7.5 ug/kg), endrin aldehyde (detected in one sample at 4.6 ug/kg), alpha-chlordane (detected in 4 samples from 2.5 to 14 ug/kg), and gamma-chlordane (detected in five samples at concentrations as high as 14 ug/kg).

Inorganic analyte concentrations are generally of the same magnitude as the background sample. Notable exceptions are arsenic and vanadium in sample SS17 at concentrations of 33.1 mg/kg and 69.1 mg/kg, respectively; barium in samples SS04, SS05, and SS16 at concentrations of 1,120, 2,590, and 774 mg/kg, respectively; and lead in sample SS06 at a concentration of 270 mg/kg. Silver and thallium were detected at concentrations near the detection limit in several samples, but were undetected in the background sample. Cyanide was detected only in sample SS21 at a concentration of 6.4 mg/kg.

The ESI analytical results are generally consistent with the results of the 1990 SSI.

3.6 Key Samples

"Key samples" are those samples that contain substances in sufficient concentration above background to document an observed release. Table 3-2 identifies ESI key samples.

Some of the compounds and analytes that comprise the key samples, however, cannot be attributed to the Pullman landfarm operation. Six key samples contained the pesticides 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, and/or alpha-chlordane at concentrations significantly above background. These pesticides are synthetic substances classified as chlorinated hydrocarbons. The first synthetic pesticide developed was DDT; its toxic effect on insects was discovered in 1939 (Encyclopedia Americana 1994). The broad use of synthetic pesticides did not begin until the 1940s, long after the sewage farm ceased operations. Therefore, these pesticides could not have been used or deposited onsite during the active life of the sewage farm. Pesticide results in the key samples were eliminated from consideration as documentation of an observed release.

The results for key sample SS20 also were not attributed to the site. This sample contained 10 PAHs, carbazole, and di-n-butylphthalate at concentrations significantly above background. However, the sample was collected from an offsite

Table 3-2
Key Sample Summary
Soil Samples

Substance		Sample Number													
		SS01 Background	SS02	SS03	SS04	SS05	SS06	SS11	SS13	SS14	SS16	SS17	SS18	SS20	SS21	SS23
Organics (ug/kg)	Xylene (total)	2 J														10 J
	Phenanthrene	240 J												21000		
	Anthracene	35 J												3500 J		
	Carbazole	32 J												2400 J		
	di-n-Butylphthalate	25 J												1300 J		
	Fluoranthene	430 J												23000		
	Pyrene	570												22000		
	Benzo(a)Anthracene	350 J												9700		
	Chrysene	330 J												12000		
	bis(2-Ethylhexyl)Phthalate	430 UJB					8900 BD			960 B						
	Benzo(b)Fluoranthene	420 J												7900		
	Benzo(k)Fluoranthene	360 J												11000		
	Benzo(a)Pyrene	340 J												9000		
	Indeno(1,2,3-cd)Pyrene	310 J												4600		
	4,4'-DDE	20 J	340 D	120 JD									580 D		430 D	
	4,4'-DDD	7.2 J														78 JD
	4,4'-DDT	23 J	160 D										370 D		140 D	
	Alpha-Chlordane	2.5 J							14 J							
Inorganics (mg/kg)	Arsenic	10.7										33.1				
	Barium	243			1120	2590					774					
	Lead	68.5					270									
	Manganese	331													1200	
	Silver	0.47 U						0.47 B	0.58 B							
	Thallium	1.4 U						2.2 B							1.5 B	
	Vanadium	19.7										69.1				
	Cyanide	0.59 U													6.4	

Notes: J Reported value is estimated.

U Substance is undetected. The reported value is the contract required quantitation limit (CRQL) for organics or contract required detection limit (CRDL) for inorganics.

B For organics: substance was found in the associated blank as well as in the sample.

For inorganics: reported value is less than the CRDL, but greater than or equal to the instrument detection limit (IDL).

D Substance was identified in an analysis at a secondary dilution factor.

Pesticide results and key sample SS20 were eliminated from consideration as documentation of an observed release because they were not attributable to the Pullman Factory site.

location. No other sample, including onsite samples, contained these compounds at significant concentrations; therefore, they could not have been sourced from the site. This sample was also eliminated from consideration as an observed release from the site.

4.0 Characterization of Sources

4.1 Introduction

ESI results indicate two sources exist at the Pullman Factory site: the landfarm and contaminated soil.

4.2 Waste Source: Landfarm

4.2.1 Description

The Pullman Factory site is an inactive 140-acre landfarm that was used for sewage disposal from 1881 to approximately 1907. Sewage was spread over the surface of the farm using pumps, piping, and hydrants, and was allowed to infiltrate through the soil, into underdrains. This process supposedly filtered out the impurities in the sewage. Filtered fluids flowed into the underdrains and then to ditches which carried fluids to Lake Calumet. The land was simultaneously tilled, and crops were grown onsite. Spreading sewage over the field was viewed as a means of irrigating and fertilizing the soil. Crops, such as onions, potatoes, cabbage, celery, beets, carrots, sweet corn, and squash, were grown onsite (Doty 1893).

As early as 1887, however, unfiltered sewage was frequently directed into Lake Calumet without being applied to the field. This was apparently done to save the crops (Engineering News 1893). The sewage farm eventually was abandoned and, by 1907, untreated sewage from the Town of Pullman was discharged directly into the Little Calumet River (Colten 1985).

The land that comprised the Pullman Factory site was later developed into a residential area. Two apartment complexes, many single family residences, a school, and a food distributor occupy the site. Interim site use is unknown between the time the sewage farm was abandoned and development of the residential area. It is not known whether the sewage farm was excavated.

4.2.2 Waste Characteristics

Wastes deposited onsite mainly consisted of untreated municipal sewage from the town of Pullman and industrial wastes from shops associated with the Pullman railcar factory. Liquid wastes from the Calumet Paint Company, later known as Sherwin-Williams, were presumably handled by the Pullman sewage system (Colten 1985). No documentation is available on the chemical composition of the wastes

deposited onsite. The amount of sewage pumped yearly from 1882 to 1892 to a holding tank at the sewage farm follows (Doty 1893):

Year	Gallons
1882	211,620,160
1883	358,354,400
1884	443,815,480
1885	468,302,120
1886	472,748,080
1887	573,700,640
1888	588,607,760
1889	602,250,000
1890	657,001,360
1891	617,664,000
1892	698,122,780

The amount of sewage actually applied to the landfarm is unknown because unfiltered sewage was frequently discharged directly into Lake Calumet as early as 1887.

4.3 Waste Source: Contaminated Soil

4.3.1 Description

Analyses of ESI soil samples indicate a portion of the onsite and nearby residential properties contain elevated levels of organic compounds and/or inorganic analytes in the soil that define, to some extent, an observed release. Key samples SS04, SS05, SS06, SS11, SS13, SS14, SS16, SS17, SS21, and SS23 document the observed release (Table 3-2). For the reasons stated in Section 3.7, results for key samples SS02, SS03, SS18, and SS20, and pesticide results for remaining key samples, are not attributable to the former sewage disposal and farming operation and were not included in determining the area of contamination.

Assuming the area between key sample locations is part of the area of observed contamination, the total area of observed contamination is approximately 80 acres. However, a portion of this area is covered by permanent, essentially impenetrable structures, including paved streets, houses, apartment buildings, and a school building. Covered areas need to be excluded from the total area of contamination. Assuming

approximately half of the area is covered by these structures, the area of observed contamination is adjusted to approximately 40 acres (1.74 million square feet).

4.3.2 Waste Characteristics

ESI analytical results indicate the area of affected soil contains releases of one volatile organic compound, one semivolatile organic compound, and eight inorganic analytes. Organic compound concentrations range from 10 to 8,900 parts per billion (ppb). Inorganic analyte concentrations range from 0.47 to 2,590 parts per million (ppm). Table 3-2 indicates substances detected in key samples and their associated concentrations.

None of the substances that comprise the key samples were consistently prevalent across the site. For organic compounds, only xylene and bis(2-ethylhexyl)phthalate have not been discounted as unattributable to the site. However, xylene was detected only once and bis(2-ethylhexyl)phthalate was detected only twice at levels significantly above background. Of the eight inorganic analytes in the key samples, only barium was detected more than twice at levels significantly above background. Silver and thallium were each detected twice; arsenic, lead, manganese, vanadium, and cyanide were each detected only once at levels significantly above background.

It was not possible to determine whether soil that was sampled was onsite during the active life of the sewage farm or whether it was fill material brought to the site some time after the sewage farm ceased operations.

5.0 Discussion of Migration Pathways

5.1 Introduction

This section includes information useful in analyzing the potential impact of contaminants found at the Pullman Factory site on the four migration pathways: groundwater, surface water, air, and soil.

5.2 Groundwater

The groundwater pathway was not sampled during the ESI and no documented releases to groundwater attributable to the site are known.

Two aquifers lie beneath the Pullman Factory site: the unconsolidated glacial drift deposits and the Silurian Niagaran dolomite bedrock. The glacial drift is composed of silt and clay, interspersed within lenses of sand and gravel. It is likely these thin permeable lenses are not connected. Underlying the glacial drift is the Silurian Niagaran dolomite formation, which is located approximately 50 to 450 feet below ground surface near the site. The Silurian bedrock consists of dolomite that varies from extremely argillaceous, silty, and cherty, to exceptionally pure (ISGS 1971). Hydraulic interconnection between the glacial drift deposits and the Silurian bedrock is unlikely because silt and clay in the glacial drift likely impede downward migration.

The site poses little threat to local drinking water supplies. The glacial drift and Silurian aquifers are not used by onsite and surrounding communities to supply drinking water to residents (IEPA 1992). The City of Chicago supplies drinking water from surface water intakes located in Lake Michigan to area residents and municipalities within four miles of the site. A few old private wells have been identified within four miles of the site as being used for drinking water; other private wells in the area are not used for drinking water. The nearest private (residential) wells are located 1 to 2 miles south of the site, in the city of Dolton; five private wells are located there and are screened in the Silurian dolomite aquifer (ARCS Contractor 1993). The only other private wells within the target distance limit that have been identified as being used for drinking water are located 3 to 4 miles from the site, in South Holland; five wells are located there (Ecology and Environment, Inc. 1991). Table 5-1 summarizes the drinking water population within four miles of the site.

Table 5-1

Private Drinking Water Well Users Within Four Miles of the Site

Radial Distance from Site (in miles)	Approximate Population Supplied by Private Wells
0 to 1/4	0
1/4 to 1/2	0
1/2 to 1	0
1 to 2	14
2 to 3	0
3 to 4	14
Total Population	28

References: ARCS Contractor 1993; Ecology and Environment, Inc. 1991.

5.3 Surface Water

Because the site has been developed into a residential area, surface drainage flows into municipal storm water sewers and, therefore, no overland contaminant migration route exists from the site to the Little Calumet River. The Little Calumet River wraps around the site to the south and west; the closest point is approximately 400 feet southwest of the site. Site surface runoff may have flowed into this receptor before development of the residential area. Surface runoff from the area south of the site may still flow south into the river. Discharge of sewage wastes into Lake Calumet, located approximately 1.3 miles northwest of the site, and into the Little Calumet River during the active life of the Pullman sewage farm, is historically documented; however, no analytical evidence exists to confirm a surface water release. The ditch used to convey sewage to Lake Calumet no longer exists.

The Little Calumet River flows westward into the Calumet Sag Channel. Both of these surface water bodies support recreational fishing. No surface water intakes exist within 15 miles downstream from the site. Targets along the 15-mile downstream distance limit include wetlands along the Little Calumet River. Appendix A contains a map depicting the 15-mile surface water route. The Whistler Forest Preserve and the Palos Forest Preserve lie along the surface water pathway, approximately 1.7 and 13 miles downstream of the probable point of entry, respectively. The Saganashkee Slough lies approximately 15 miles downstream of the probable point of entry.

5.4 Air

No documented air releases are known and none was observed during the ESI. No air sampling was performed during the ESI. During ESI sampling activities, air monitoring activities with a photo-ionization detector showed no readings above background.

The potential for the release of hazardous substances from the site into the air exists because ESI analytical results document the presence of hazardous substances in the top two feet of soil. Sampled areas do not have an engineered cover and are not surrounded by engineering windbreak. Potential targets include onsite and nearby residents, and students and teachers at the DuBois Public School and Ira F. Aldridge Elementary School. These potential targets are further discussed in the following subsection.

5.5 Soil

Site soil could have been affected by the municipal and industrial sewage applied to the land during the active life of the sewage farm. ESI analytical results indicate that an area of affected soil exists onsite, containing releases of one volatile organic compound, one semivolatile organic compound, and eight inorganic analytes. This area is defined by key sample locations SS04, SS05, SS06, SS11, SS13, SS14, SS16, SS17, SS21, and SS23, which document the observed release. Other key sample locations (SS02, SS03, SS18, SS20) and all pesticide results have been discounted as unattributable to the site and are not included in delineating the affected area.

Of the key samples that document the observed release, samples SS04 and SS05 were collected from Eden Green Cooperative property in the southwestern section of the site; both samples contained barium at concentrations meeting observed release criteria. Samples SS06, SS11, SS13, and SS14 were collected from onsite single family residential properties; these samples showed observed releases of bis(2-ethylhexyl)phthalate, lead, silver, or thallium. Sample SS16 was collected from a residential property just outside the southern site boundary; it showed an observed release of barium. Sample SS17 was collected just outside the southeastern corner of the site; it showed observed releases of arsenic and vanadium. Sample SS21 was collected from the DuBois Public School in the southwestern section of the site; it showed observed releases of manganese, thallium, and cyanide. Sample SS23 was collected from Golden Gate Park in the northern portion of the site; it contained xylene at a concentration above background that meets observed release criteria. All samples were collected from depths of less than two feet.

The potential exists for onsite residents to come into direct contact with affected soil. The key sample analytical results document the presence of hazardous substances in the shallow soils on residential properties, a school, and a playground located onsite, as well as on residential properties south of the site. No barriers exist to prevent public access to the area where the sewage farm was located.

The following information about the onsite and nearby resident population was obtained during the ESI:

- The Eden Green Cooperative property has 439 apartment units, with 900 adults and 1,700 to 1,800 children (0 to 17 years old) living on the property. Approximately 1,400 of these residents live on the portion of the Eden Green Cooperative property that is onsite; the others live west of Indiana Avenue.

- Approximately 450 students, pre-kindergarten through eighth grade, attend the Dubois Public School located onsite.
- The Concordia Park Apartments complex has 297 units, all of which are located onsite. It is estimated that 800 residents live on that property.

All other residential properties located onsite are single family homes. The total onsite resident population is estimated to be 3,990 persons (USDOC 1991). Approximately 2,950 of these residents are located within the area of affected soil delineated by the key sample locations.

Surrounding land use is a mixture of residential and industrial establishments. The Ira F. Aldridge Elementary School and the Altgeld Gardens public housing development are located adjacent to the eastern site boundary. Residences are also located south and southwest of the site, in the area between the site and the Little Calumet River. Approximately 21,590 people live within a one mile radius of the site (IEPA 1990).

6.0 References

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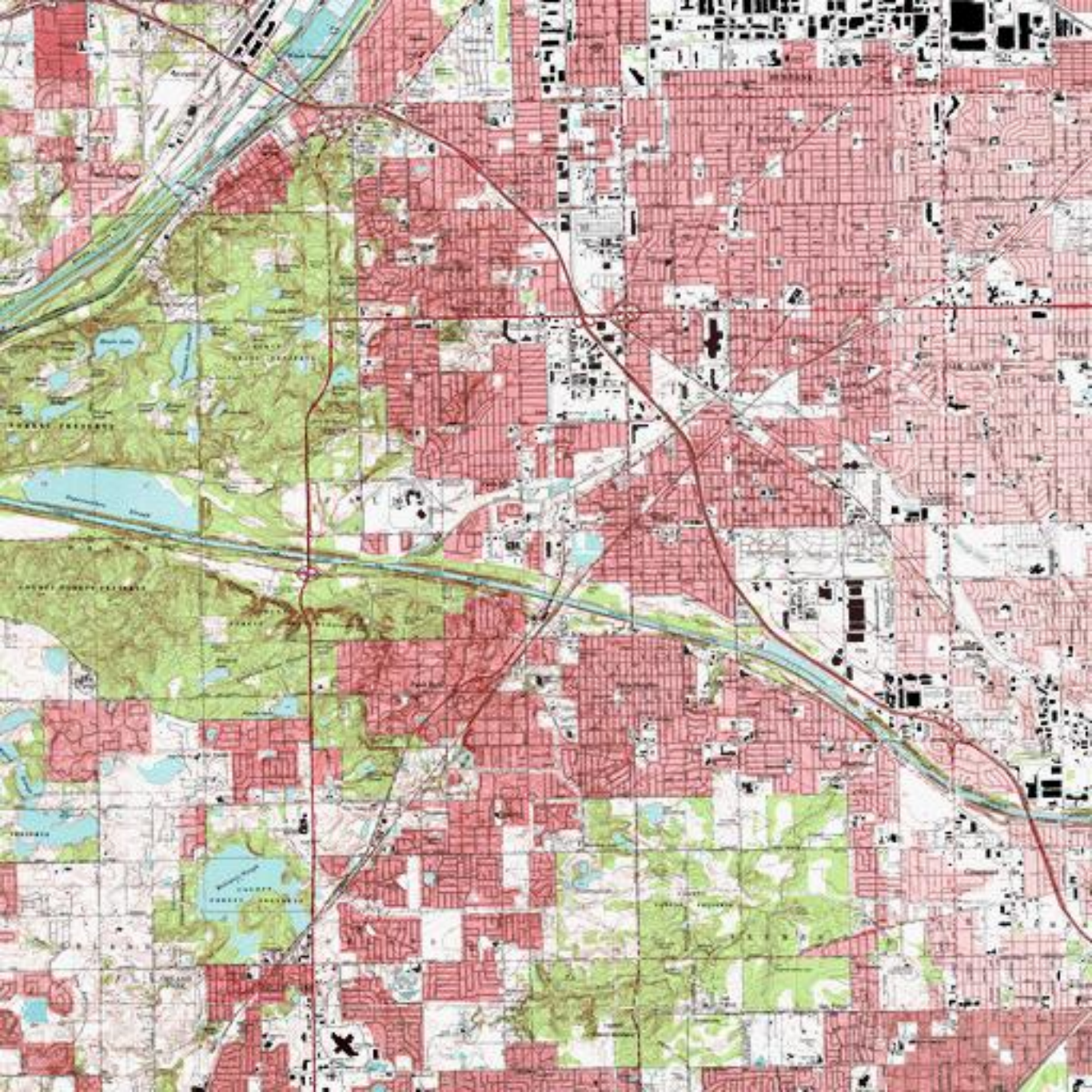
U.S. Geological Survey, 7.5 Minute Series Topographic Maps for Lake Calumet, IL-IN (1991); Blue Island, IL (1973); Harvey, IL (1973); and Calumet City, IL-IN (1991) Quadrangles.

Appendix A

Pullman Factory

15-Mile Surface Water Route Map



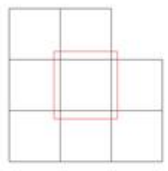

EVERGREEN PARK
CHICAGO

Lake Calumet

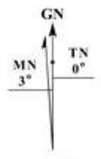
o41087f5

Vicinity Map

Index Map



Date	Quad Name	(Contour Int)
2001	Highland	5 FT
2000	Calumet City	5 FT
1993	Harvey	5 FT
1991	Whiting	5 FT
1994	Lake Calumet	5 FT
1999	Blue Island	5 FT
1993	Jackson Park	5 FT
1999	Englewood	5 FT



Magnetic declination of 3W at center of map on March 17, 2011

1:24000 scale

Universal Transverse Mercator (UTM) Projection Zone 16
North American Datum of 1983
1000 meter UTM / USNG / MGRS
Grid Zone Designation: 16T
100,000-m Squares:DM

Appendix B

Pullman Factory

Target Compound List and Target Analyte List

Target Compound List

Volatiles

Chloromethane	1,2-Dichloropropane
Bromomethane	Cis-1,3-Dichloropropene
Vinyl Chloride	Trichloroethene
Chloroethane	Dibromochloromethane
Methylene Chloride	1,1,2-Trichloroethane
Acetone	Benzene
Carbon Disulfide	trans-1,3-Dichloropropane
1,1-Dichloroethene	Bromoform
1,1-Dichloroethane	4-Methyl-2-pentanone
1,2-Dichloroethene (total)	2-Hexanone
Chloroform	Tetrachloroethene
1,2-Dichloroethane	Toluene
2-Butanone	1,1,2,2-Tetrachloroethane
1,1,1-Trichloroethane	Chlorobenzene
Carbon Tetrachloride	Ethyl benzene
Bromodichloromethane	Styrene
	Xylenes (total)

Source: Target Compound List for water and soil with low or medium levels of volatile and semivolatile organic contaminants, as shown in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, ARCS Contractor, September 27, 1991.

Target Compound List (Continued)

Semivolatiles

Phenol	Acenaphthene
bis(2-Chloroethyl) ether	2,4-Dinitrophenol
2-Chlorophenol	4-Nitrophenol
1,3-Dichlorobenzene	Dibenzofuran
1,4-Dichlorobenzene	2,4-Dinitrotoluene
1,2-Dichlorobenzene	Diethylphthalate
2-Methylphenol	4-Chlorphenyl-phenyl ether
2,2-oxybis-(1-Chloropropane)*	Fluorene
4-Methylphenol	4-Nitroaniline
N-Nitroso-di-n-dipropylamine	4,6-Dinitro-2-methylphenol
Hexachloroethane	N-Nitrosodiphenylamine
Nitrobenzene	4-Bromophenyl-phenyl ether
Isophorone	Hexachlorobenzene
2-Nitrophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenanthrenel
bis(2-Chloroethoxy) methane	Anthracene
2,4-Dichlorophenol	Carbazole
1,2,4-Trichlorobenzene	Di-n-butylphthalate
Naphthalene	Fluoranthene
4-Chloroaniline	Pyrene
Hexachlorobutadiene	Butyl benzyl phthalate
4-Chloro-3-methylhenol	3,3-Dichlorbenzidine
2-Methylnaphthalene	Benzo(a)anthracene
Hexachlorocyclopentadiene	Chrysene
2,4,6-Trichlorophenol	bis(2-Ethylhexyl)phthalate
2,4,5-Trichlorophenol	Di-n-Octyphthalate
2-Chloronephthalene	Benzo(b)fluoranthene
2-Nitroaniline	Benzo(k)fluoranthene
Dimethylphthalate	Benzo(a)pyrene
Acenaphthylene	Indeno(1,2,3-cd)pyrene
2,6-Dinitrotoluene	Dibenzo(a,h)anthracene
3-Nitroaniline	Benzo(g,h,i)perylene

*Previously known by the name of bis(2-chlorousipropyl) ether.

Source: Target Compound List for water and soil with low or medium levels of volatile and semivolatile organic contaminants, as shown in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, ARCS Contractor, September 27, 1991.

Target Compound List (Continued)

Pesticide/PCB

alpha-BHC	4,4-DDT
beta-BHC	Methoxychlor
delta-BHC	Endrin ketone
gamma-BHC (Lindane)	Endrin aldehyde
Heptachlor	alpha-chlordane
Aldrin	gamma-chlordane
Heptachlor epoxide	Toxaphene
Endosulfan I	Aroclor-1016
Dieldrin	Aroclor-1221
4,4-DDE	Aroclor-1232
Endrin	Aroclor-1242
Endosulfan II	Aroclor-1248
4,4-DDD	Aroclor-1254
Endosulfan sulfate	Aroclor-1260

Source: Target Compound List for water and soil containing less than high concentrations of pesticides/aroclors, as shown in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, ARCS Contractor, September 27, 1991.

Target Analyte List

Aluminum	Magnesium
Antimony	Manganese
Arsenic	Mercury
Barium	Nickel
Beryllium	Potassium
Cadmium	Selenium
Calcium	Silver
Chromium	Sodium
Cobalt	Thallium
Copper	Vanadium
Iron	Zinc
Lead	Cyanide

Source: Target Analyte List in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, ARCS Contractor, September 27, 1991.

Appendix C

Pullman Factory

Analytical Results

Appendix C

Table of Contents

Data Reporting Qualifiers
Definitions for Organic Chemical Data Qualifiers

R - Indicates that the data are unusable. The compound may or may not be present.

U - Indicates compound was analyzed for but not detected. The associated numerical value is the sample quantitation limit.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

N - Indicates presumptive evidence of a compound. This flag is only used for TICs where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, the N code is not used.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported and flagged with a "P".

C - This flag applies to results where identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag must be used for a TIC as well as for a positively identified TCL compound.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for the specific analysis. This flag will not apply to pesticide/PCBs analyzed by GC/MS methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - Other specific flags may be required to properly define the results. The "X" flags are fully described on the data tables.

Data Reporting Qualifiers
Definitions for Inorganic Chemical Data Qualifiers

R - Indicates that the data are unusable. The compound may or may not be present.

U - Indicates compound was analyzed for but not detected. The associated numerical value is the sample quantitation limit.

J - Indicates an estimated value.

B - Indicates that the reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).

E - The reported value is estimated because of the presence of interference.

M - Duplicate injection precision criteria not met.

N - Spiked sample recovery not within control limits.

S - The reported value was determined by the Method of Standard Additions (MSA).

W - Post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.

* - Duplicate analysis was not within control limits.

+ - Correlation coefficient for the MSA was less than 0.995.

Volatile Organic Analysis for Soil Samples Pullman Factory								
Volatile Compound	Sample Location and Number Concentrations in ug/kg							
	SS01 Backgrnd EJZ18	SS02 EJZ19	SS03 EJZ20	SS04 EJZ21	SS05 EJZ22	SS06 EJZ23	SS07 EJZ24	SS08 EJZ25
Chloromethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Bromomethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Vinyl Chloride	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Chloroethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Methylene Chloride	27 UB	25 UB	18 UB	13 UB	22 UB	12 UJB	13 UB	13 UB
Acetone	16 UB	20 UB	11 UJB	14 UB	12 UJB	15 UB	14 UB	12 UJB
Carbon Disulfide	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
1,1-Dichloroethene	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
1,1-Dichloroethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
1,2-Dichloroethene (total)	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Chloroform	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
1,2-Dichloroethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
2-Butanone	13 UJB	15 U	11 U	12 UJB	12 UJB	12 UJB	13 UJB	12 U
1,1,1-Trichloroethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Carbon Tetrachloride	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Bromodichloromethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
1,2-Dichloropropane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
cis-1,3-Dichloropropene	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Trichloroethene	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Dibromochloromethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
1,1,2-Trichloroethane	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Benzene	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
trans-1,3-Dichloropropene	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
Bromoform	13 U	15 U	11 U	12 U	12 U	12 U	13 U	12 U
4-Methyl-2-Pentanone	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
2-Hexanone	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
Tetrachloroethene	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
1,1,2,2-Tetrachloroethane	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
Toluene	3 J	4 J	3 J	2 J	6 J	12 UJ	4 J	2 J
Chlorobenzene	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
Ethylbenzene	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
Styrene	13 U	15 U	11 U	12 U	12 UJ	12 UJ	13 UJ	12 UJ
Xylene (total)	2 J	4 J	3 J	2 J	4 J	12 UJ	2 J	2 J
Total Number of TICs *	2	1	1	0	1	0	0	0

* Number, not concentrations, of tentatively identified compounds (TICs) is reported in this table.

Volatile Organic Analysis for Soil Samples (Continued) Pullman Factory								
Volatile Compound	Sample Location and Number Concentrations in ug/kg							
	SS09 EJZ26	SS10 EJZ27	SS11 EJZ28	SS12 EJZ29	SS13 EJZ30	SS14 EQY38	SS15 EQG89	SS16 EQG90
Chloromethane	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
Bromomethane	13 U	13 U	12 UJ	13 UJ	12 UJ	12 UJ	11 U	12 U
Vinyl Chloride	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
Chloroethane	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
Methylene Chloride	13 UJB	13 UJB	12 UJB	13 UJB	12 UJB	12 UJB	11 UJB	12 UJB
Acetone	16 UB	17 UB	21 UB	20 UB	17 UB	15 UB	29 UB	16 UB
Carbon Disulfide	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
1,1-Dichloroethene	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
1,1-Dichloroethane	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
1,2-Dichloroethene (total)	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
Chloroform	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
1,2-Dichloroethane	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
2-Butanone	13 UJB	13 UJB	12 UJB	13 UJB	12 U	12 UJB	11 UJB	12 UJB
1,1,1-Trichloroethane	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
Carbon Tetrachloride	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Bromodichloromethane	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
1,2-Dichloropropane	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
cis-1,3-Dichloropropene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Trichloroethene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Dibromochloromethane	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
1,1,2-Trichloroethane	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Benzene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
trans-1,3-Dichloropropene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Bromoform	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
4-Methyl-2-Pentanone	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
2-Hexanone	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Tetrachloroethene	13 U	13 U	12 U	13 U	12 U	12 U	11 U	12 U
1,1,2,2-Tetrachloroethane	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Toluene	13 U	1 J	1 J	13 U	12 U	12 U	2 J	2 J
Chlorobenzene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Ethylbenzene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Styrene	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Xylene (total)	13 U	13 U	12 U	13 U	12 U	12 U	11 UJ	12 UJ
Total Number of TICs *	0	0	0	0	0	0	1	0

* Number, not concentrations, of tentatively identified compounds (TICs) is reported in this table.

Volatile Organic Analysis for Soil Samples (Continued) Pullman Factory							
Volatile Compound	Sample Location and Number Concentrations in ug/kg						
	SS17 EQG91	SS18 EQG92	SS19 EQG93	SS20 EQG94	SS21 EQG95	SS22 EQG96	SS23 EQG97
Chloromethane	12 U	12 U	12 U	13 U	13 U	15 U	14 U
Bromomethane	12 U	12 UJ	12 U	13 U	13 U	15 U	14 U
Vinyl Chloride	12 U	12 U	12 U	13 U	13 U	15 U	14 U
Chloroethane	12 U	12 U	12 U	13 U	13 U	15 U	14 U
Methylene Chloride	12 UJB	12 UJB	12 UJB	13 UJB	13 UJB	15 UJB	22 UB
Acetone	20 UB	18 UB	15 UB	20 UB	13 UB	15 UJB	14 UJB
Carbon Disulfide	12 U	12 U	12 U	13 U	13 U	15 U	14 U
1,1-Dichloroethene	12 U	12 U	12 U	13 U	13 U	15 U	14 U
1,1-Dichloroethane	12 U	12 U	12 U	13 U	13 U	15 U	14 U
1,2-Dichloroethene (total)	12 U	12 U	12 U	13 U	13 U	15 U	14 U
Chloroform	12 U	12 U	12 U	13 U	13 U	15 U	14 U
1,2-Dichloroethane	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
2-Butanone	12 UJB	12 UJB	12 UJB	13 UJB	13 UJB	15 U	14 UJB
1,1,1-Trichloroethane	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
Carbon Tetrachloride	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
Bromodichloromethane	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
1,2-Dichloropropane	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
cis-1,3-Dichloropropene	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
Trichloroethene	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
Dibromochloromethane	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
1,1,2-Trichloroethane	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
Benzene	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
trans-1,3-Dichloropropene	12 UJ	12 U	12 U	13 UJ	13 U	15 UJ	14 U
Bromoform	12 U	12 U	12 U	13 U	13 U	15 U	14 U
4-Methyl-2-Pentanone	12 UJ	12 U	12 U	13 UJ	13 UJ	15 UJ	14 UJ
2-Hexanone	12 UJ	12 U	12 U	13 UJ	13 UJ	15 UJ	14 UJ
Tetrachloroethene	12 U	12 U	12 U	13 U	13 UJ	15 U	14 UJ
1,1,2,2-Tetrachloroethane	12 UJ	12 U	12 U	13 UJ	13 UJ	15 UJ	14 UJ
Toluene	4 J	1 J	2 J	13 UJ	2 J	7 J	7 J
Chlorobenzene	12 UJ	12 U	12 U	13 UJ	13 UJ	15 UJ	14 UJ
Ethylbenzene	12 UJ	12 U	12 U	13 UJ	13 UJ	15 UJ	2 J
Styrene	12 UJ	12 U	12 U	13 UJ	13 UJ	15 UJ	14 UJ
Xylene (total)	12 UJ	12 U	12 U	13 UJ	2 J	4 J	10 J
Total Number of TICs *	1	1	0	0	1	1	0

* Number, not concentrations, of tentatively identified compounds (TICs) is reported in this table.

SOIL-VOL

Volatile Organic Analysis for Soil Samples Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS01		
Unknown	2.18	130
Trichlorofluoromethane	3.18	10 JN
Sample SS02		
Unknown	2.18	91
Sample SS03		
Unknown	2.18	35
Sample SS05		
Trichlorofluoromethane	3.18	10 JN
Sample SS15		
Trichlorofluoromethane	3.22	7 JN
Sample SS17		
Trichlorofluoromethane	3.20	5 JN
Sample SS18		
Trichlorofluoromethane	3.20	7 JN
Sample SS21		
Dimethyl Disulfide	10.85	8 JN
Sample SS22		
Trichlorofluoromethane	3.22	14 JN

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Semivolatile Organic Analysis for Soil Samples Pullman Factory								
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg							
	SS01 Backgrnd EJZ18	SS02 EJZ19	SS03 EJZ20	SS04 EJZ21	SS05 EJZ22	SS06 EJZ23	SS07 EJZ24	SS08 EJZ25
Phenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
bis(2-Chloroethyl)Ether	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2-Chlorophenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
1,3-Dichlorobenzene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
1,4-Dichlorobenzene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
1,2-Dichlorobenzene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2-Methylphenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2,2'-oxybis(1-Chloropropane)	430 UJ	490 UJ	380 UJ	400 UJ	410 UJ	410 U	420 U	390 U
4-Methylphenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
n-Nitroso-Di-n-Propylamine	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Hexachloroethane	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Nitrobenzene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Isophorone	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2-Nitrophenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2,4-Dimethylphenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
bis(2-Chloroethoxy)Methane	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2,4-Dichlorophenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
1,2,4-Trichlorobenzene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Naphthalene	430 U	490 U	380 U	400 U	410 U	410 U	28 J	21 J
4-Chloroaniline	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Hexachlorobutadiene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
4-Chloro-3-Methylphenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2-Methylnaphthalene	430 U	490 U	380 U	400 U	410 U	410 U	40 J	390 U
Hexachlorocyclopentadiene	430 UJ	490 UJ	380 UJ	400 UJ	410 UJ	410 U	420 U	390 U
2,4,6-Trichlorophenol	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2,4,5-Trichlorophenol	1100 U	1200 U	920 U	980 U	990 U	1000 U	1000 U	940 U
2-Chloronaphthalene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2-Nitroaniline	1100 U	1200 U	920 U	980 U	990 U	1000 U	1000 U	940 U
Dimethyl Phthalate	430 U	31 J	380 U	400 U	410 U	410 U	420 U	390 U
Acenaphthylene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2,6-Dinitrotoluene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
3-Nitroaniline	1100 U	1200 U	920 U	980 U	990 U	1000 U	1000 U	940 U
Acenaphthene	430 U	15 J	380 U	400 U	410 U	410 U	420 U	390 U

Semivolatile Organic Analysis for Soil Samples (Continued) Pullman Factory								
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg							
	SS01 Backgrnd EJZ18	SS02 EJZ19	SS03 EJZ20	SS04 EJZ21	SS05 EJZ22	SS06 EJZ23	SS07 EJZ24	SS08 EJZ25
2,4-Dinitrophenol	1100 UJ	1200 UJ	920 UJ	980 UJ	990 UJ	1000 U	1000 U	940 U
4-Nitrophenol	1100 UJ	1200 UJ	920 UJ	980 UJ	990 UJ	1000 UJ	1000 UJ	940 UJ
Dibenzofuran	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
2,4-Dinitrotoluene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Diethylphthalate	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
4-Chlorophenyl-phenylether	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Fluorene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
4-Nitroaniline	1100 U	1200 U	920 U	980 U	990 U	1000 U	1000 U	940 U
4,6-Dinitro-2-Methylphenol	1100 U	1200 U	920 U	980 U	990 U	1000 U	1000 U	940 U
n-Nitrosodiphenylamine	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
4-Bromophenyl-phenylether	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Hexachlorobenzene	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Pentachlorophenol	1100 UJ	1200 UJ	920 UJ	980 UJ	990 UJ	1000 UJ	1000 UJ	940 UJ
Phenanthrene	240 J	260 J	76 J	65 J	130 J	180 J	300 J	390
Anthracene	35 J	37 J	380 U	400 U	24 J	410 U	420 U	59 J
Carbazole	32 J	490 U	380 U	400 U	410 U	410 U	420 U	51 J
di-n-Butylphthalate	25 J	27 J	240 J	42 J	31 J	410 U	240 J	390 U
Fluoranthene	430 J	340 J	150 J	120 J	240 J	410 J	630	790
Pyrene	570	430 J	200 J	170 J	330 J	410 J	710	630
Butylbenzylphthalate	34 J	28 J	140 J	400 U	410 U	410 U	97 J	390 U
3,3'-Dichlorobenzidine	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Benzo(a)Anthracene	350 J	230 J	98 J	83 J	160 J	290 J	570	360 J
Chrysene	330 J	220 J	140 J	92 J	190 J	280 J	540	340 J
bis(2-Ethylhexyl)Phthalate	430 UJB	490 UJB	380 UJB	400 UJB	410 UJB	8900 BD	420 UJB	390 UJB
di-n-Octyl Phthalate	430 U	490 U	380 U	400 U	410 U	410 U	420 U	390 U
Benzo(b)Fluoranthene	420 J	220 J	180 J	98 J	180 J	360 J	750	490
Benzo(k)Fluoranthene	360 J	220 J	380 U	73 J	150 J	210 J	430 J	390 UJ
Benzo(a)Pyrene	340 J	190 J	92 J	71 J	140 J	260 J	550	250 J
Indeno(1,2,3-cd)Pyrene	310 J	160 J	78 J	54 J	110 J	240 J	460	240 J
Dibenzo(a,h)Anthracene	140 J	69 J	28 J	400 U	40 J	120 J	180 J	100 J
Benzo(g,h,i)Perylene	350 J	170 J	87 J	65 J	130 J	280 J	580	230 J
Total Number of TICs	20	20	14	16	20	15	20	16

Semivolatile Organic Analysis for Soil Samples (Continued) Pullman Factory								
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg							
	SS09 EJZ26	SS10 EJZ27	SS11 EJZ28	SS12 EJZ29	SS13 EJZ30	SS14 EQY38	SS15 EQG89	SS16 EQG90
Phenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
bis(2-Chloroethyl)Ether	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2-Chlorophenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
1,3-Dichlorobenzene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
1,4-Dichlorobenzene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
1,2-Dichlorobenzene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2-Methylphenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2,2'-oxybis(1-Chloropropane)	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
4-Methylphenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
n-Nitroso-Di-n-Propylamine	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Hexachloroethane	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Nitrobenzene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Isophorone	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2-Nitrophenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2,4-Dimethylphenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
bis(2-Chloroethoxy)Methane	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2,4-Dichlorophenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
1,2,4-Trichlorobenzene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Naphthalene	440 U	420 U	29 J	440 U	400 U	390 U	380 U	400 U
4-Chloroaniline	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Hexachlorobutadiene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
4-Chloro-3-Methylphenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2-Methylnaphthalene	440 U	23 J	400 U	440 U	400 U	390 U	380 U	400 U
Hexachlorocyclopentadiene	440 U	420 U	400 U	440 U	400 UJ	390 U	380 U	400 U
2,4,6-Trichlorophenol	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2,4,5-Trichlorophenol	1100 U	1000 U	980 U	1100 U	960 U	940 U	920 U	980 U
2-Chloronaphthalene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
2-Nitroaniline	1100 U	1000 U	980 U	1100 U	960 U	940 U	920 U	980 U
Dimethyl Phthalate	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Acenaphthylene	440 U	420 U	400 U	42 J	23 J	390 U	380 U	400 U
2,6-Dinitrotoluene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
3-Nitroaniline	1100 U	1000 U	980 U	1100 U	960 U	940 U	920 U	980 U
Acenaphthene	440 U	420 U	30 J	440 U	400 U	390 U	380 U	400 U

Semivolatile Organic Analysis for Soil Samples (Continued) Pullman Factory								
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg							
	SS09 EJZ26	SS10 EJZ27	SS11 EJZ28	SS12 EJZ29	SS13 EJZ30	SS14 EQY38	SS15 EQG89	SS16 EQG90
2,4-Dinitrophenol	1100 U	1000 U	980 UJ	1100 UJ	960 U	940 U	920 U	980 U
4-Nitrophenol	1100 UJ	1000 UJ	980 U	1100 U	960 U	940 U	920 U	980 U
Dibenzofuran	440 U	420 U	30 J	440 U	400 U	390 U	380 U	400 U
2,4-Dinitrotoluene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Diethylphthalate	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
4-Chlorophenyl-phenylether	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Fluorene	440 U	420 U	58 J	440 U	400 U	390 U	380 U	400 U
4-Nitroaniline	1100 U	1000 U	980 U	1100 U	960 U	940 U	920 U	980 U
4,6-Dinitro-2-Methylphenol	1100 U	1000 U	980 U	1100 U	960 U	940 U	920 U	980 U
n-Nitrosodiphenylamine	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
4-Bromophenyl-phenylether	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Hexachlorobenzene	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Pentachlorophenol	1100 UJ	1000 UJ	980 U	1100 U	960 UJ	940 U	920 U	980 U
Phenanthrene	130 J	120 J	510	160 J	120 J	87 J	64 J	170 J
Anthracene	440 U	420 U	65 J	24 J	23 J	390 U	11 J	24 J
Carbazole	440 U	420 U	48 J	440 U	400 U	390 U	380 U	23 J
di-n-Butylphthalate	41 J	120 J	65 J	41 J	22 J	22 J	33 J	21 J
Fluoranthene	260 J	280 J	570	330 J	220 J	170 J	130 J	440
Pyrene	270 J	280 J	510	390 J	300 J	180 J	150 J	440
Butylbenzylphthalate	120 J	420 U	400 U	440 U	21 J	25 J	37 J	400 U
3,3'-Dichlorobenzidine	440 U	420 U	400 U	440 U	400 UJ	390 U	380 U	400 U
Benzo(a)Anthracene	160 J	240 J	260 J	190 J	140 J	130 J	88 J	280 J
Chrysene	170 J	220 J	330 J	290 J	140 J	160 J	100 J	360 J
bis(2-Ethylhexyl)Phthalate	590 B	420 UJB	400 UJB	760 B	400 UJB	960 B	380 UJB	400 UJB
di-n-Octyl Phthalate	440 U	420 U	400 U	440 U	400 U	390 U	380 U	400 U
Benzo(b)Fluoranthene	260 J	370 J	290 J	300 J	130 J	170 J	150 J	340 J
Benzo(k)Fluoranthene	440 UJ	420 UJ	300 J	300 J	140 J	120 J	380 U	320 J
Benzo(a)Pyrene	150 J	190 J	300 J	340 J	160 J	140 J	86 J	290 J
Indeno(1,2,3-cd)Pyrene	130 J	190 J	140 J	200 J	110 J	89 J	59 J	230 J
Dibenzo(a,h)Anthracene	45 J	96 J	54 J	85 J	31 J	32 J	22 J	110 J
Benzo(g,h,i)Perylene	440 U	200 J	110 J	190 J	110 J	73 J	61 J	190 J
Total Number of TICs	20	14	20	20	16	15	13	15

Semivolatile Organic Analysis for Soil Samples (Continued) Pullman Factory							
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg						
	SS17 EQG91	SS18 EQG92	SS19 EQG93	SS20 EQG94	SS21 EQG95	SS22 EQG96	SS23 EQG97
Phenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
bis(2-Chloroethyl)Ether	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2-Chlorophenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
1,3-Dichlorobenzene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
1,4-Dichlorobenzene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
1,2-Dichlorobenzene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2-Methylphenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2,2'-oxybis(1-Chloropropane)	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
4-Methylphenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
n-Nitroso-Di-n-Propylamine	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Hexachloroethane	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Nitrobenzene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Isophorone	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2-Nitrophenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2,4-Dimethylphenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
bis(2-Chloroethoxy)Methane	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2,4-Dichlorophenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
1,2,4-Trichlorobenzene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Naphthalene	33 J	400 U	410 U	860 J	430 U	500 U	450 U
4-Chloroaniline	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Hexachlorobutadiene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
4-Chloro-3-Methylphenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2-Methylnaphthalene	51 J	400 U	410 U	4200 U	430 U	500 U	450 U
Hexachlorocyclopentadiene	410 U	400 UJ	410 U	4200 U	430 U	500 U	450 U
2,4,6-Trichlorophenol	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2,4,5-Trichlorophenol	990 U	980 U	990 U	10000 U	1000 U	1200 U	1100 U
2-Chloronaphthalene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2-Nitroaniline	990 U	980 U	990 U	10000 U	1000 U	1200 U	1100 U
Dimethyl Phthalate	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Acenaphthylene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
2,6-Dinitrotoluene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
3-Nitroaniline	990 U	980 U	990 U	10000 U	1000 U	1200 U	1100 U
Acenaphthene	410 U	400 U	410 U	2000 J	430 U	500 U	450 U

Semivolatile Organic Analysis for Soil Samples (Continued) Pullman Factory							
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg						
	SS17 EQG91	SS18 EQG92	SS19 EQG93	SS20 EQG94	SS21 EQG95	SS22 EQG96	SS23 EQG97
2,4-Dinitrophenol	990 U	980 U	990 U	10000 UJ	1000 U	1200 U	1100 U
4-Nitrophenol	990 U	980 U	990 U	10000 U	1000 UJ	1200 U	1100 U
Dibenzofuran	410 U	400 U	410 U	960 J	430 U	500 U	450 U
2,4-Dinitrotoluene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Diethylphthalate	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
4-Chlorophenyl-phenylether	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Fluorene	410 U	400 U	410 U	2100 J	430 U	500 U	450 U
4-Nitroaniline	990 U	980 U	990 U	10000 U	1000 U	1200 U	1100 U
4,6-Dinitro-2-Methylphenol	990 U	980 U	990 U	10000 U	1000 U	1200 U	1100 U
n-Nitrosodiphenylamine	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
4-Bromophenyl-phenylether	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Hexachlorobenzene	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Pentachlorophenol	990 U	980 UJ	990 U	10000 U	1000 UJ	1200 U	1100 U
Phenanthrene	80 J	73 J	33 J	21000	320 J	200 J	80 J
Anthracene	410 U	400 U	410 U	3500 J	42 J	26 J	76 J
Carbazole	410 U	400 U	410 U	2400 J	35 J	500 U	450 U
di-n-Butylphthalate	24 J	25 J	31 J	1300 J	44 J	28 J	55 J
Fluoranthene	160 J	150 J	72 J	23000	730	420 J	190 J
Pyrene	170 J	160 J	79 J	22000	680	480 J	140 J
Butylbenzylphthalate	410 U	400 U	410 U	4200 U	34 J	500 U	450 UJ
3,3'-Dichlorobenzidine	410 U	400 UJ	410 U	4200 U	430 U	500 U	450 U
Benzo(a)Anthracene	120 J	80 J	49 J	9700	480	240 J	90 J
Chrysene	150 J	92 J	52 J	12000	450	260 J	130 J
bis(2-Ethylhexyl)Phthalate	410 U	400 UJB	410 UJB	4200 UJB	630 B	500 UJB	450 UJB
di-n-Octyl Phthalate	410 U	400 U	410 U	4200 U	430 U	500 U	450 U
Benzo(b)Fluoranthene	120 J	82 J	81 J	7900	580	160 J	180 J
Benzo(k)Fluoranthene	410 U	76 J	410 U	11000	510 J	93 J	450 U
Benzo(a)Pyrene	120 J	80 J	45 J	9000	500	210 J	190 J
Indeno(1,2,3-cd)Pyrene	92 J	50 J	26 J	4600	420 J	160 J	450 U
Dibenzo(a,h)Anthracene	48 J	400 U	410 U	2300 J	190 J	71 J	450 U
Benzo(g,h,i)Perylene	86 J	49 J	23 J	2900 J	460	150 J	450 U
Total Number of TICs	13	20	16	14	20	20	9

Semivolatile Organic Analysis for Soil Samples Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS01		
Unknown	7.17	290 J
Unknown	11.77	130 J
Unknown	18.45	130 J
Unknown Alkane	19.87	230 J
Unknown Alkane	29.55	140 J
Unknown	30.28	200 J
Unknown	30.63	510 J
Unknown Alkane	31.07	560 J
Unknown Polynuclear Aromatic	31.48	670 J
Unknown	32.38	140 J
Unknown Alkane	32.85	420 J
Unknown	33.37	150 J
Unknown	35.70	2600 J
Unknown	36.07	490 J
Unknown	36.90	190 J
Sample SS02		
Unknown	7.07	340 J
Unknown	11.67	170 J
Unknown Siloxane	14.27	170 J
Unknown	26.97	190 J
Unknown	29.00	170 J
Unknown	29.45	120 J
Unknown	30.20	120 J
Unknown	30.53	180 J
Unknown Alkane	30.97	480 J
Unknown Polynuclear Aromatic	31.38	350 J
Unknown Alkane	32.75	450 J
Unknown	34.18	180 J
Unknown	35.60	2200 J
Unknown	35.98	370 J
Unknown	39.00	110 J
Sample SS03		
Unknown	7.17	120 J
Unknown	11.75	79 J
Unknown Siloxane	14.33	88 J
Unknown Alkane	19.85	81 J
Unknown	30.27	160 J
Unknown Alkane	31.05	250 J
Unknown Polynuclear Aromatic	31.47	180 J
Unknown Alkane	32.83	270 J
Unknown	35.67	970 J
Unknown	36.05	360 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS04		
Unknown	7.08	250 J
Unknown	11.68	110 J
Unknown Siloxane	14.27	140 J
Unknown Alkane	29.47	100 J
Unknown	30.18	100 J
Unknown	30.55	350 J
Unknown Alkane	30.97	380 J
Unknown Polynuclear Aromatic	31.38	210 J
Unknown Alkane	32.75	450 J
Unknown Alkane	35.15	120 J
Unknown	35.60	980 J
Unknown	35.98	250 J
Sample SS05		
Unknown	7.17	240 J
Unknown Alkane	10.50	280 J
Unknown	18.45	140 J
Unknown Alkane	19.10	150 J
Unknown Alkane	19.85	400 J
Unknown Alkane	22.18	140 J
Unknown Alkane	24.30	120 J
Unknown Alkane	25.28	150 J
Unknown Alkane	26.20	120 J
Unknown	27.95	220 J
Unknown	29.55	150 J
Unknown	29.80	170 J
Unknown	30.03	200 J
Unknown	30.30	190 J
Unknown	30.63	220 J
Unknown Alkane	31.05	380 J
Unknown	31.32	280 J
Unknown	32.83	370 J
Sample SS06		
Unknown	7.25	300 J
Unknown	11.85	110 J
Unknown Alkane	29.63	170 J
Unknown	30.35	96 J
Unknown	30.72	96 J
Unknown Alkane	31.13	390 J
Unknown	31.40	90 J
Unknown Polynuclear Aromatic	31.55	320 J
Unknown Alkane	32.93	450 J
Unknown Alkane	35.35	110 J
Unknown	35.78	1300 J
Unknown	36.17	300 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS07		
Unknown	7.27	370 J
Unknown	11.85	130 J
Unknown Alkane	19.95	110 J
Unknown Polynuclear Aromatic	22.93	120 J
Unknown Polynuclear Aromatic	26.00	130 J
Unknown	28.05	110 J
Unknown	28.87	93 J
Unknown Polynuclear Aromatic	29.32	95 J
Unknown Alkane	29.65	210 J
Unknown	30.37	180 J
Unknown Alkane	31.15	550 J
Unknown	31.42	330 J
Unknown Polynuclear Aromatic	31.57	640 J
Unknown	32.48	97 J
Unknown Alkane	32.95	420 J
Unknown	33.48	190 J
Unknown	35.83	3600 J
Unknown	37.03	260 J
Sample SS08		
Unknown	7.20	280 J
Unknown	11.80	96 J
Unknown	14.15	110 J
Unknown	22.87	96 J
Unknown Polynuclear Aromatic	25.95	71 J
Unknown Alkane	29.58	94 J
Unknown	30.30	150 J
Unknown	30.67	130 J
Unknown Alkane	31.08	250 J
Unknown Polynuclear Aromatic	31.50	270 J
Unknown Alkane	32.88	210 J
Unknown	35.73	710 J
Sample SS09		
Unknown	7.28	300 J
Unknown Alkane	10.62	170 J
Unknown	11.88	110 J
Unknown	14.10	120 J
Unknown Alkane	15.67	120 J
Unknown	18.57	190 J
Unknown Alkane	19.22	110 J
Unknown Alkane	19.90	180 J
Unknown Alkane	19.98	300 J
Unknown	29.67	98 J
Unknown	30.40	160 J
Unknown	30.75	150 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS09 (Continued)		
Unknown Alkane	31.18	220 J
Unknown Polynuclear Aromatic	31.58	130 J
Unknown Alkane	32.97	190 J
Unknown	35.83	690 J
Unknown	36.22	150 J
Sample SS10		
Unknown	7.25	350 J
Unknown	11.85	130 J
Unknown Siloxane	14.43	100 J
Unknown Organic Acid	27.20	720 J
Unknown Alkane	29.63	150 J
Unknown	30.35	120 J
Unknown Alkane	31.13	310 J
Unknown Polynuclear Aromatic	31.55	190 J
Unknown Alkane	32.93	300 J
Unknown	35.80	1800 J
Sample SS11		
Unknown	6.93	350 J
Unknown	7.25	210 J
Unknown Alkane	13.75	230 J
Unknown Alkane	15.33	190 J
Unknown Alkane	19.62	330 J
Unknown Alkane	25.07	170 J
Unknown Alkane	27.73	150 J
Unknown Alkane	29.33	240 J
Unknown	30.03	200 J
Unknown Alkane	30.83	360 J
Unknown	31.07	350 J
Unknown Polynuclear Aromatic	31.13	380 J
Unknown	32.00	240 J
Unknown Alkane	32.50	400 J
Unknown	32.97	250 J
Unknown	35.07	1700 J
Unknown	35.43	460 J
Unknown	36.17	270 J
Sample SS12		
Unknown	6.85	300 J
Unknown Alkane	13.67	480 J
Unknown Alkane	15.25	500 J
Unknown Alkane	16.18	350 J
Unknown Alkane	18.13	300 J
Unknown Alkane	18.82	500 J
Unknown Alkane	19.55	810 J
Unknown Alkane	21.88	310 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS12 (Continued)		
Unknown Alkane	22.98	330 J
Unknown Alkane	24.98	300 J
Unknown Alkane	25.92	380 J
Unknown Organic Acid	26.83	4300 J
Unknown Alkane	27.67	410 J
Unknown Alkane	28.35	920 J
Unknown Alkane	28.48	290 J
Unknown Alkane	29.27	460 J
Unknown	30.35	450 J
Unknown Alkane	30.77	490 J
Unknown Polynuclear Aromatic	31.07	420 J
Unknown Alkane	32.43	540 J
Sample SS13		
Unknown	6.78	120 J
Unknown	7.40	130 J
Unknown	27.33	82 J
Unknown Alkane	29.48	93 J
Unknown	30.33	110 J
Unknown	30.57	120 J
Unknown Alkane	31.00	250 J
Unknown	31.25	100 J
Unknown Polynuclear Aromatic	31.42	150 J
Unknown	32.30	280 J
Unknown Alkane	32.77	160 J
Unknown	35.62	2000 J
Unknown	35.98	310 J
Unknown	36.80	120 J
Sample SS14		
Unknown	6.95	240 J
Unknown	11.25	130 J
Unknown	19.70	150 J
Unknown Alkane	29.47	96 J
Unknown	30.53	400 J
Unknown Alkane	30.97	220 J
Unknown Polynuclear Aromatic	31.30	190 J
Unknown	31.77	86 J
Unknown Alkane	32.73	250 J
Unknown	35.47	770 J
Unknown	35.85	100 J
Unknown	36.65	84 J
Sample SS15		
Unknown	7.53	110 J
Unknown	19.15	73 J
Unknown Alkane	19.90	150 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS15 (Continued)		
Unknown Alkane	27.98	90 J
Unknown	29.58	88 J
Unknown	30.33	92 J
Unknown	30.67	79 J
Unknown Alkane	31.08	220 J
Unknown Alkane	32.87	190 J
Unknown	35.68	1000 J
Unknown	36.05	160 J
Sample SS16		
Unknown	6.85	230 J
Unknown Polynuclear Aromatic	25.67	94 J
Unknown Alkane	29.37	130 J
Unknown	30.08	110 J
Unknown	30.45	430 J
Unknown Alkane	30.87	390 J
Unknown	31.13	110 J
Unknown Polynuclear Aromatic	31.22	370 J
Unknown	31.70	86 J
Unknown Alkane	32.65	190 J
Unknown	35.38	1300 J
Unknown	35.77	300 J
Unknown	36.57	96 J
Sample SS17		
Unknown	6.98	210 J
Unknown Alkane	29.48	92 J
Unknown	30.57	87 J
Unknown Alkane	31.00	160 J
Unknown	31.25	120 J
Unknown Polynuclear Aromatic	31.33	140 J
Unknown	32.25	94 J
Unknown	32.77	150 J
Unknown	35.53	3500 J
Unknown	35.88	390 J
Unknown	36.68	120 J
Sample SS18		
Unknown	7.47	170 J
Unknown Alkane	18.43	110 J
Unknown Alkane	19.10	110 J
Unknown Alkane	19.77	130 J
Unknown Alkane	19.85	330 J
Unknown Alkane	22.18	120 J
Unknown Alkane	23.28	120 J
Unknown Alkane	24.30	130 J
Unknown Alkane	25.28	140 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS18 (Continued)		
Unknown Alkane	27.93	160 J
Unknown Alkane	29.53	140 J
Unknown	30.62	210 J
Unknown Alkane	31.03	310 J
Unknown	31.23	150 J
Unknown	31.30	180 J
Unknown Alkane	32.80	250 J
Unknown	33.37	150 J
Unknown	35.63	1200 J
Sample SS19		
Unknown	6.78	140 J
Unknown	7.08	260 J
Unknown	27.32	120 J
Unknown	29.58	310 J
Unknown	30.55	150 J
Unknown Alkane	30.98	180 J
Unknown	31.25	680 J
Unknown	32.28	290 J
Unknown Alkane	32.75	130 J
Unknown	33.28	340 J
Unknown	35.60	3000 J
Unknown	35.98	1600 J
Unknown	36.80	460 J
Sample SS20		
Unknown Polynuclear Aromatic	22.25	820 J
4H-Cyclopenta(D,E,F)Phenanthrene	22.48	2400 JN
Unknown Polynuclear Aromatic	23.02	1100 J
Benzo(B)Naphthalene(2,3-D)	25.00	650 JN
Unknown Polynuclear Aromatic	25.57	2200 J
Unknown Polynuclear Aromatic	25.73	1800 J
Triphenyl Phosphoric Acid	27.07	3100 JN
Benzo(B)Naphtho-Thiophene	27.18	4500 J
Unknown Polynuclear Aromatic	27.28	3000 J
Unknown Polynuclear Aromatic	28.12	5700 J
Unknown Polynuclear Aromatic	29.25	2200 J
Unknown Polynuclear Aromatic	30.68	2500 J
Unknown Polynuclear Aromatic	31.07	8800 J
Sample SS21		
Unknown	7.28	270 J
Unknown	11.87	110 J
Unknown Alkane	19.97	120 J
Unknown	22.87	95 J
Unknown	22.95	170 J
Unknown Polynuclear Aromatic	26.03	98 J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Pullman Factory Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS21 (Continued)		
Unknown	27.18	120 J
Unknown Alkane	28.05	100 J
Unknown Alkane	28.87	89 J
Unknown Alkane	29.65	180 J
Unknown	30.38	230 J
Unknown	30.73	210 J
Unknown Alkane	31.17	590 J
Unknown Polynuclear Aromatic	31.58	500 J
Unknown Alkane	32.95	490 J
Unknown Alkane	35.38	110 J
Unknown	35.82	1500 J
Sample SS22		
Unknown	6.82	260 J
Unknown Alkane	27.73	91 J
Unknown	28.50	160 J
Unknown	28.60	200 J
Unknown Alkane	29.35	190 J
Unknown	29.45	95 J
Unknown Alkane	30.10	130 J
Unknown	30.42	200 J
Unknown Alkane	30.85	700 J
Unknown	31.10	250 J
Unknown Polynuclear Aromatic	31.20	300 J
Unknown	32.12	250 J
Unknown Alkane	32.63	400 J
Unknown	33.13	120 J
Unknown	35.42	4900 J
Unknown	35.77	1800 J
Unknown	36.57	240 J
Sample SS23		
Unknown	7.15	130 J
Unknown	11.75	140 J
Unknown	11.83	130 J
Unknown	23.37	140 J
Unknown Organic Acid	27.12	210 J
Unknown	31.08	430 J

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Pesticide/PCB Analysis for Soil Samples Pullman Factory								
Pesticide/PCB	Sample Location and Number / Concentrations in ug/kg							
	SS01 Backgrnd EJZ18	SS02 EJZ19	SS03 EJZ20	SS04 EJZ21	SS05 EJZ22	SS06 EJZ23	SS07 EJZ24	SS08 EJZ25
Alpha-BHC	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.0 UJ
Beta-BHC	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.0 UJ
Delta-BHC	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.0 UJ
Gamma-BHC (Lindane)	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.3 J	2.6 JP	2.0 UJ
Heptachlor	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.0 UJ
Aldrin	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.0 UJ
Heptachlor Epoxide	9.6 J	9.8 J	7.4 J	2.1 UJ	2.1 UJ	30 J	2.2 UJ	1.6 J
Endosulfan I	2.2 UJ	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.0 UJ
Dieldrin	15 J	16 JP	7.5 J	4.0 UJ	4.1 UJ	24 J	4.2 UJ	3.9 UJ
4,4'-DDE	20 J	340 D	120 JD	18 J	4.3 JP	72 D	32 J	7.1 J
Endrin	4.3 UJ	4.9 UJ	3.8 UJ	4.0 UJ	4.1 UJ	4.1 UJ	4.2 UJ	3.9 UJ
Endosulfan II	4.3 UJ	4.9 UJ	3.8 UJ	4.0 UJ	4.1 UJ	4.1 UJ	4.2 UJ	3.9 UJ
4,4'-DDD	7.2 J	19 JPX	22 J	3.2 J	2.1 JP	4.1 UJ	4.2 UJ	3.9 UJ
Endosulfan Sulfate	4.3 UJ	4.9 UJ	3.8 UJ	4.0 UJ	4.1 UJ	4.1 UJ	4.2 UJ	3.9 UJ
4,4'-DDT	23 J	160 D	49 JD	14 J	10 J	46 J	20 J	5.4 JP
Methoxychlor	22 UJ	25 UJ	20 UJ	21 UJ	21 UJ	21 UJ	22 UJ	20 UJ
Endrin Ketone	4.3 UJ	4.9 UJ	3.8 UJ	4.0 UJ	4.1 UJ	4.1 UJ	4.2 UJ	3.9 UJ
Endrin Aldehyde	4.3 UJ	4.9 UJ	3.8 UJ	4.0 UJ	4.1 UJ	4.1 UJ	4.2 UJ	3.9 UJ
Alpha-Chlordane	2.5 J	2.5 UJ	2.0 UJ	2.1 UJ	2.1 UJ	9.6 J	2.2 UJ	2.0 UJ
Gamma-Chlordane	5.4 J	2.9 J	2.0 UJ	2.1 UJ	2.1 UJ	14 J	2.2 UJ	2.0 UJ
Toxaphene	220 UJ	250 UJ	200 UJ	210 UJ	210 UJ	210 UJ	220 UJ	200 UJ
Aroclor-1016	43 UJ	49 UJ	38 UJ	40 UJ	41 UJ	41 UJ	42 UJ	39 UJ
Aroclor-1221	88 UJ	100 UJ	77 UJ	82 UJ	83 UJ	84 UJ	85 UJ	79 UJ
Aroclor-1232	43 UJ	49 UJ	38 UJ	40 UJ	41 UJ	41 UJ	42 UJ	39 UJ
Aroclor-1242	43 UJ	49 UJ	38 UJ	40 UJ	41 UJ	41 UJ	42 UJ	39 UJ
Aroclor-1248	43 UJ	49 UJ	38 UJ	40 UJ	41 UJ	41 UJ	42 UJ	39 UJ
Aroclor-1254	43 UJ	49 UJ	38 UJ	40 UJ	41 UJ	41 UJ	42 UJ	39 UJ
Aroclor-1260	43 UJ	49 UJ	38 UJ	40 UJ	41 UJ	41 UJ	42 UJ	39 UJ

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Pesticide/PCB Analysis for Soil Samples (Continued) Pullman Factory								
Pesticide/PCB	Sample Location and Number / Concentrations in ug/kg							
	SS09 EJZ26	SS10 EJZ27	SS11 EJZ28	SS12 EJZ29	SS13 EJZ30	SS14 EQY38	SS15 EQG89	SS16 EQG90
Alpha-BHC	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.1 UJ
Beta-BHC	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	4.0 JPX	2.5 JPX
Delta-BHC	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.1 UJ
Gamma-BHC (Lindane)	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.1 UJ
Heptachlor	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.1 UJ
Aldrin	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.1 UJ
Heptachlor Epoxide	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.8 JP	2.0 UJ	2.0 UJ	2.1 UJ
Endosulfan I	2.3 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.1 UJ
Dieldrin	4.4 UJ	4.2 UJ	4.0 UJ	4.4 UJ	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
4,4'-DDE	12 J	8.4 J	25 J	10 J	4.8 J	9.1 J	94 JD	3.9 J
Endrin	4.4 UJ	4.2 UJ	4.0 UJ	4.4 UJ	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
Endosulfan II	4.4 UJ	4.2 UJ	4.0 UJ	4.4 UJ	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
4,4'-DDD	4.4 UJ	3.1 J	4.3 JP	3.4 J	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
Endosulfan Sulfate	4.4 UJ	4.2 UJ	4.0 UJ	4.4 UJ	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
4,4'-DDT	15 J	10 J	38 J	6.9 J	5.6 J	9.3 J	69 JD	4.0 UJ
Methoxychlor	23 UJ	22 UJ	21 UJ	23 UJ	20 UJ	20 UJ	20 UJ	21 UJ
Endrin Ketone	4.4 UJ	4.2 UJ	4.0 UJ	4.4 UJ	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
Endrin Aldehyde	4.4 UJ	4.2 UJ	4.0 UJ	4.4 UJ	4.0 UJ	3.9 UJ	3.8 UJ	4.0 UJ
Alpha-Chlordane	2.3 UJ	2.2 UJ	2.1 UJ	4.9 J	14 J	2.0 UJ	2.0 UJ	2.1 UJ
Gamma-Chlordane	2.3 UJ	2.2 UJ	2.1 UJ	2.2 JP	9.0 J	2.0 UJ	2.0 UJ	2.1 UJ
Toxaphene	230 UJ	220 UJ	210 UJ	230 UJ	200 UJ	200 UJ	200 UJ	210 UJ
Aroclor-1016	44 UJ	42 UJ	40 UJ	44 UJ	40 UJ	39 UJ	38 UJ	40 UJ
Aroclor-1221	89 UJ	85 UJ	82 UJ	89 UJ	81 UJ	79 UJ	77 UJ	82 UJ
Aroclor-1232	44 UJ	42 UJ	40 UJ	44 UJ	40 UJ	39 UJ	38 UJ	40 UJ
Aroclor-1242	44 UJ	42 UJ	40 UJ	44 UJ	40 UJ	39 UJ	38 UJ	40 UJ
Aroclor-1248	44 UJ	42 UJ	40 UJ	44 UJ	40 UJ	39 UJ	38 UJ	40 UJ
Aroclor-1254	44 UJ	42 UJ	40 UJ	44 UJ	40 UJ	39 UJ	38 UJ	40 UJ
Aroclor-1260	44 UJ	42 UJ	40 UJ	44 UJ	40 UJ	39 UJ	38 UJ	40 UJ

Pesticide/PCB Analysis for Soil Samples (Continued) Pullman Factory							
Pesticide/PCB	Sample Location and Number / Concentrations in ug/kg						
	SS17 EQG91	SS18 EQG92	SS19 EQG93	SS20 EQG94	SS21 EQG95	SS22 EQG96	SS23 EQG97
Alpha-BHC	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Beta-BHC	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Delta-BHC	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Gamma-BHC (Lindane)	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Heptachlor	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Aldrin	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Heptachlor Epoxide	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.3 J	2.6 UJ	2.3 UJ
Endosulfan I	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Dieldrin	4.1 UJ	4.0 UJ	4.1 UJ	4.2 UJ	4.3 UJ	5.0 UJ	4.5 UJ
4,4'-DDE	5.5 J	580 D	3.1 J	23 JP	430 D	14 J	74 JD
Endrin	4.1 UJ	4.0 UJ	4.1 UJ	4.2 UJ	4.3 UJ	5.0 UJ	4.5 UJ
Endosulfan II	4.1 UJ	4.0 UJ	4.1 UJ	4.2 UJ	4.3 UJ	5.0 UJ	4.5 UJ
4,4'-DDD	4.1 UJ	11 JPX	4.1 UJ	4.2 UJ	14 JP	3.3 JP	< 78 JD
Endosulfan Sulfate	4.1 UJ	4.0 UJ	4.1 UJ	4.2 UJ	4.3 UJ	5.0 UJ	4.5 UJ
4,4'-DDT	3.8 J	370 D	1.7 JP	36 J	140 D	17 J	91 JD
Methoxychlor	21 UJ	21 UJ	21 UJ	22 UJ	22 UJ	26 UJ	23 UJ
Endrin Ketone	4.1 UJ	4.0 UJ	4.1 UJ	7.5 JP	4.3 UJ	5.0 UJ	4.5 UJ
Endrin Aldehyde	4.1 UJ	4.0 UJ	4.1 UJ	4.6 JPX	4.3 UJ	5.0 UJ	4.5 UJ
Alpha-Chlordane	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Gamma-Chlordane	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.3 UJ
Toxaphene	210 UJ	210 UJ	210 UJ	220 UJ	220 UJ	260 UJ	230 UJ
Aroclor-1016	41 UJ	40 UJ	41 UJ	42 UJ	43 UJ	50 UJ	45 UJ
Aroclor-1221	83 UJ	82 UJ	83 UJ	85 UJ	87 UJ	100 UJ	92 UJ
Aroclor-1232	41 UJ	40 UJ	41 UJ	42 UJ	43 UJ	50 UJ	45 UJ
Aroclor-1242	41 UJ	40 UJ	41 UJ	42 UJ	43 UJ	50 UJ	45 UJ
Aroclor-1248	41 UJ	40 UJ	41 UJ	42 UJ	43 UJ	50 UJ	45 UJ
Aroclor-1254	41 UJ	40 UJ	41 UJ	42 UJ	43 UJ	50 UJ	45 UJ
Aroclor-1260	41 UJ	40 UJ	41 UJ	42 UJ	43 UJ	50 UJ	45 UJ

Inorganic Analysis for Soil Samples Pullman Factory								
Metals and Cyanide	Sample Location and Number / Concentrations in mg/kg							
	SS01 Backgrnd MEQR90	SS02 MEQR91	SS03 MEQR92	SS04 MEQR93	SS05 MEQR94	SS06 MEQR95	SS07 MEQR96	SS08 MEQR97
Aluminum	10600	13300	8560	5410	10600	9040	9690	7530
Antimony	6.7 JBN	10.9 JBN	9.6 JBN	4.9 JBN	8.6 JBN	7.4 JBN	4.9 JBN	7.0 JBN
Arsenic	10.7	14.3	12.7	8.3	10.7	12.2	13.2	15.8
Barium	243	427	292	1120	2590	101	102	76.1
Beryllium	0.59 B	0.69 B	0.53 B	0.35 B	0.59 B	0.64 B	0.79 B	0.50 B
Cadmium	0.71 U	0.74 U	0.69 U	0.70 U	0.77 U	0.73 U	0.75 U	0.69 U
Calcium	27300	16000	10100	5930	40800	48600	27100	3690
Chromium	17.9	24.6	17.0	9.0	18.3	22.9	24.6	18.8
Cobalt	8.9 B	10.9 B	8.6 B	5.1 B	9.3 B	6.6 B	9.6 B	7.5 B
Copper	34.9 J*	28.5 J*	21.6 J*	14.6 J*	23.9 J*	27.5 J*	34.2 J*	26.5 J*
Iron	19000	24800	19200	9370	21600	20700	21900	16600
Lead	68.5	81.8	59.2	49.7	98.7	270	102	64.8
Magnesium	14200	9110	6090	2380	19700	22100	15400	2180
Manganese	331	642	396	363	598	440	387	327
Mercury	0.14 JN*	0.20 JN*	0.16 JN*	0.12 UJN*	0.30 JN*	0.15 JN*	0.22 JN*	0.15 JN*
Nickel	19.1	22.4	16.4	12.4	25.5	21.3	24.3	15.3
Potassium	1650	2580	2160	523 B	2160	2190	2850	1140 B
Selenium	0.95 U	0.99 U	0.92 U	0.93 U	1.0 U	0.97 U	1.0 U	0.92 U
Silver	0.47 U	0.50 U	0.46 U	0.47 U	0.51 U	0.49 U	0.50 U	0.85 JB
Sodium	179 U	187 U	173 U	176 U	193 U	184 U	189 U	174 U
Thallium	1.4 U	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U	1.4 U
Vanadium	19.7	29.9	21.6	16.5	26.1	25.6	29.1	18.8
Zinc	125 JE	154 JE	108 JE	68.3 JE	103 JE	254 JE	187 JE	105 JE
Cyanide	0.59 U	0.62 U	0.57 U	0.58 U	0.64 U	0.61 U	0.62 U	0.58 U

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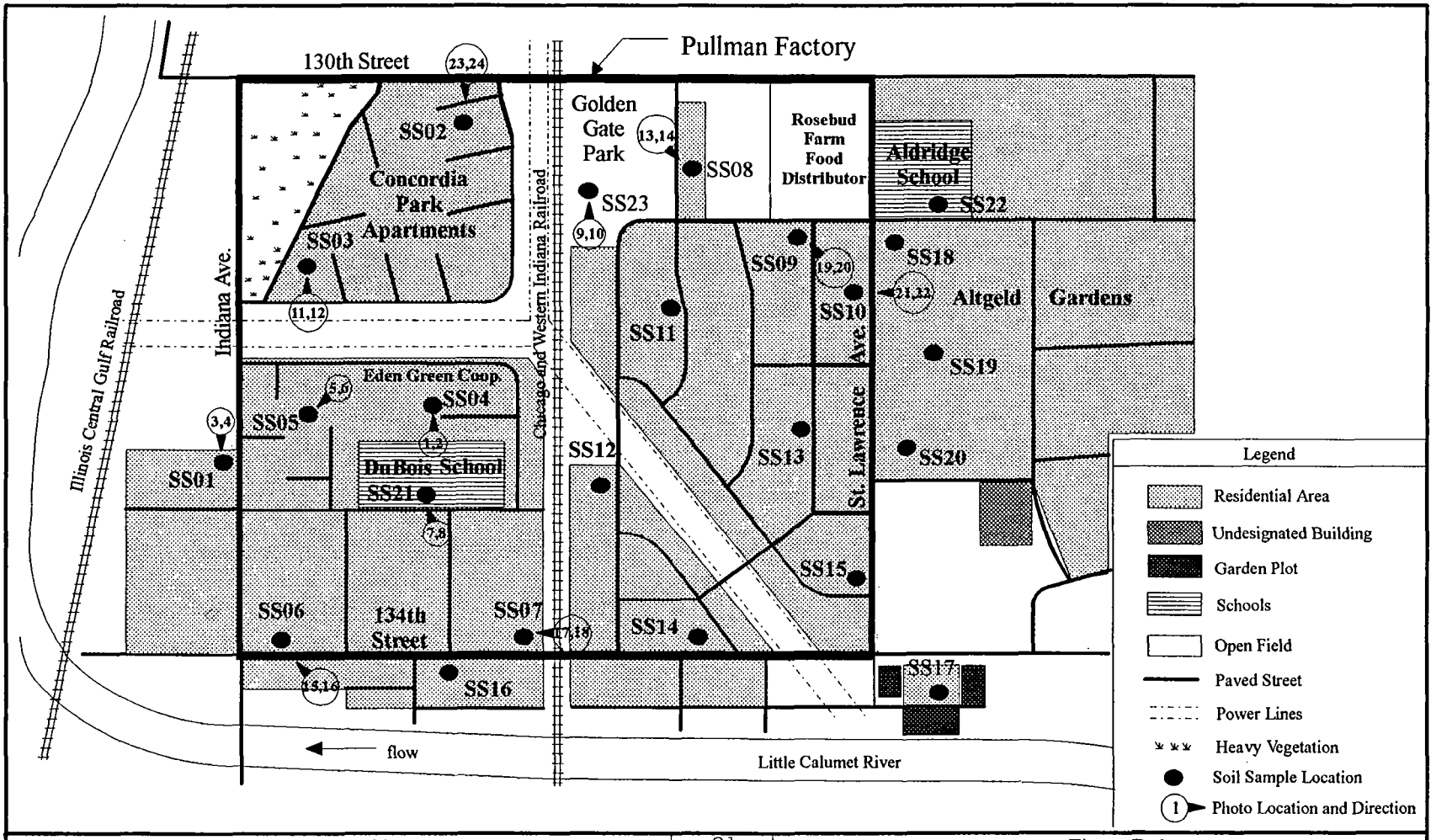
Inorganic Analysis for Soil Samples (Continued) Pullman Factory								
Metals and Cyanide	Sample Location and Number / Concentrations in mg/kg							
	SS09 MEQR98	SS10 MEQR99	SS11 MEQR48	SS12 MEQR49	SS13 MEQR50	SS14 MEQD84	SS15 MEQD85	SS16 MEQD86
Aluminum	13000	6910	6740	9600	5770	10400	8010	10500
Antimony	12.6 JBN	7.2 JBN	6.3 B	9.0 B	10.4 B	7.7 JBN	4.7 JBN	8.1 JBN
Arsenic	14.4	12.8	11.2	11.1	16.1	9.8	9.8	13.1
Barium	113	76.4	74.1	57.2	46.5 B	43.6 B	49.6	(774)
Beryllium	1.4	0.55 B	0.45 B	0.69 B	0.44 B	0.54 B	0.39 B	0.62 B
Cadmium	0.77 U	0.74 U	0.47 U	0.52 U	0.66 B	0.69 U	0.72 U	0.72 U
Calcium	34000	13000	20200	49000	3540	67500	28400	30900
Chromium	32.2	18.4	12.7	18.9	17.9	14.8	10.5	17.6
Cobalt	12.7 B	7.6 B	8.9 B	12.6 B	8.2 B	6.3 B	5.5 B	7.2 B
Copper	36.2 J*	25.2 J*	39.4 *	26.8 *	25.3 *	16.1 J*	15.7 J*	23.2 J*
Iron	28700	19700	16400	20200	17600	18100	13800	19300
Lead	68.1	58.3	62.8	48.6	46.8	35.7	29.7	106
Magnesium	18000	7370	10000	25200	2380	32000	15400	17900
Manganese	467	334	333 JN	507 JN	457 JN	(425)	278	387
Mercury	0.21 JN*	0.16 JN*	0.19 JN	0.36 JN	0.27 JN	0.12 UJN*	0.12 UN*	0.16 JN*
Nickel	28.0	16.8	21.0	32.3	19.1	18.2	12.5	19.5
Potassium	2170	1740	970 B	2480	1030 B	1360	882 B	981 B
Selenium	1.0 U	0.98 U	0.93 U	1.0 U	0.93 U	0.92 U	0.96 U	0.97 U
Silver	0.51 U	0.49 U	0.47 B	0.52 U	0.58 B	0.51 JB	0.48 U	0.48 U
Sodium	194 U	186 U	401 JB	524 JB	412 JB	174 U	181 U	182 U
Thallium	1.5 U	1.5 U	2.2 B	1.6 U	1.4 U	1.4 U	1.4 U	1.4 U
Vanadium	32.6	23.2	17.4	22.1	19.2	18.2	14.7	20.1
Zinc	140 JE	123 JE	93.4	99.7	78.2	72.2 JE	67.7 JE	145 JE
Cyanide	0.64 U	0.62 U	0.58 U	0.66 U	0.58 U	0.58 U	0.60 U	0.60 U

Inorganic Analysis for Soil Samples (Continued) Pullman Factory							
Metals and Cyanide	Sample Location and Number / Concentrations in mg/kg						
	SS17 MEQD87	SS18 MEQD88	SS19 MEQD89	SS20 MEQD38	SS21 MEQD39	SS22 MEQD40	SS23 MEQD49
Aluminum	12300	16500	19300	11000	7910	25100	11500
Antimony	8.9 JBN	11.9 JBN	8.4 JBN	9.2 JBN	6.6 JBN	14.3 JBN	6.2 JBN
Arsenic	33.1	11.3	7.3	7.7	9.4	14.0	8.7
Barium	79.4	99.6	60.7	31.1 B	569	119	56.5
Beryllium	0.89 B	0.81 B	0.84 B	0.52 B	0.65 B	1.3	0.66 B
Cadmium	0.74 U	0.71 U	0.68 U	0.75 U	0.70 U	0.76 U	0.71 U
Calcium	12000	42100	32600	22400	61700	19500	4710
Chromium	19.5	36.7	25.6	10.7	17.3	26.7	14.9
Cobalt	11.0 B	12.8	8.9 B	7.7 B	6.2 B	13.3	8.0 B
Copper	21.9 J*	27.9 J*	16.0 J*	20.1 J*	23.0 J*	49.3 J*	24.1 J*
Iron	36400	26900	24200	13100	14500	28600	15000
Lead	55.9	74.2	13.2	19.8	74.9	67.9	39.1
Magnesium	4090	22200	20000	11400	26100	10000	3250
Manganese	450	520	256	239	1200	582	209
Mercury	0.12 UJN*	0.12 UJN*	0.11 UJN*	0.13 UJN*	0.14 JN*	0.14 JN*	0.12 UJN*
Nickel	20.7	33.2	26.5	17.0	13.6	36.6	20.6
Potassium	1620	4320	3020	1230 B	1230	2770	1550
Selenium	0.99 U	0.95 U	0.91 U	1.0 U	0.93 U	1.0 U	0.95 U
Silver	0.50 U	0.48 U	0.46 U	0.50 U	0.47 U	0.51 U	0.47 U
Sodium	187 U	180 U	172 U	190 U	176 U	192 U	179 U
Thallium	1.5 U	1.4 U	1.4 U	1.5 U	1.5 B	1.5 U	1.4 U
Vanadium	69.1	33.3	31.2	13.9	15.4	27.4	17.5
Zinc	127 JE	159 JE	52.8 JE	49.5 JE	364 JE	133 JE	87.7 JE
Cyanide	0.62 U	0.60 U	0.57 U	0.63 U	6.4	0.64 U	0.59 U

Appendix D

Pullman Factory

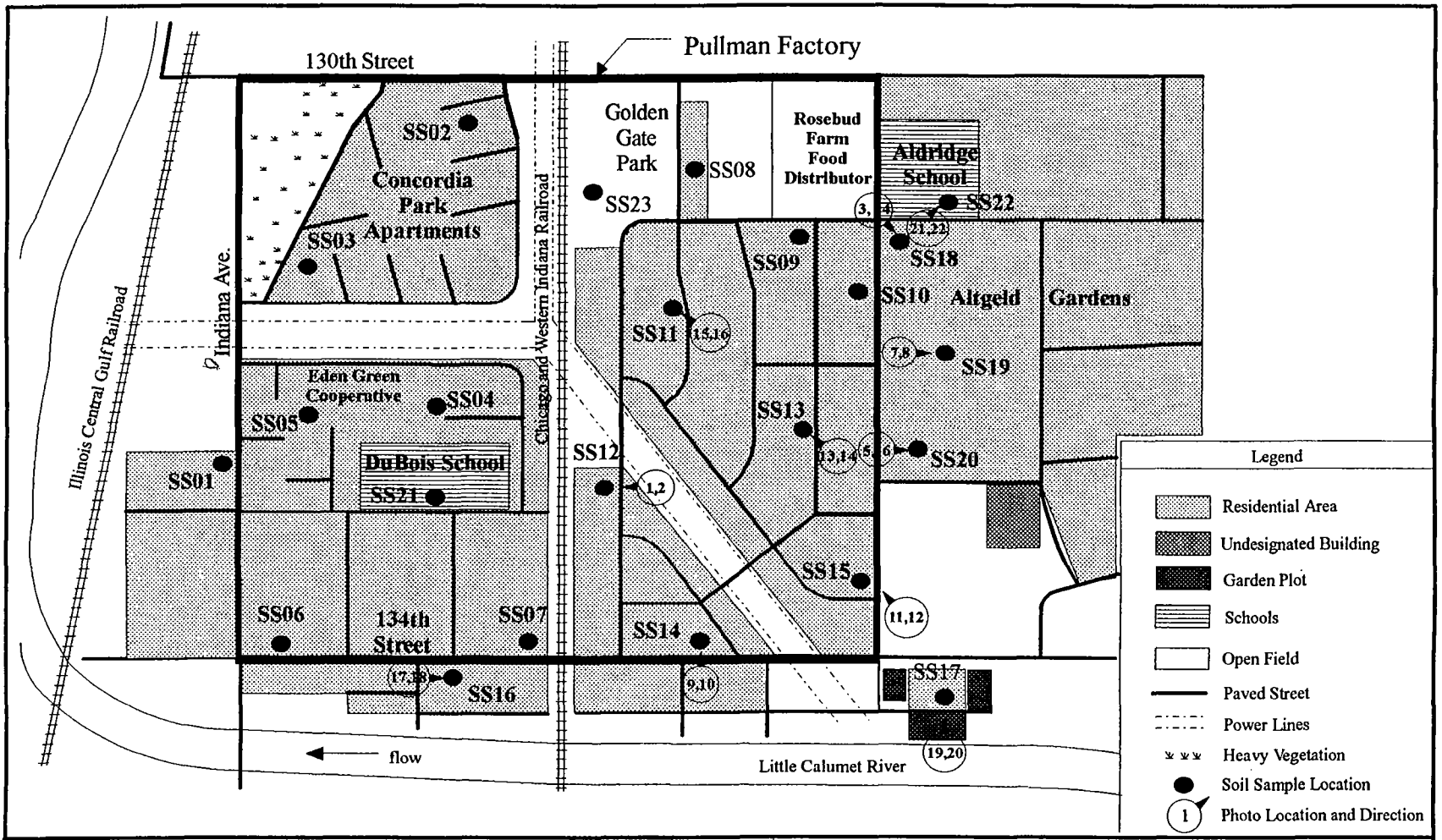
Site Photographs



Source:	Modified from USGS Topographic Map Lake Calumet (1991) Quadrangle
Scale:	Not to scale

Figure D-1
Photo Location Map - Roll No. 1
Pullman Factory
Chicago, Illinois

FRE00130
9.27.94



Source:	Modified from USGS Topographic Map Lake Calumet (1991) Quadrangle	N	Figure D-2 Photo Location Map - Roll No. 2
Scale:	Not to scale		Pullman Factory Chicago, Illinois

FRE00132
9.27.94

Date: 1/19/94

Time: 1350

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 1

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Closeup of sample location SS04, on Eden Green Cooperative property, at the southwest corner of the Jerry Poore Community Building.

Date: 1/19/94

Time: 1350

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 2

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Perspective view of sample location SS04, on Eden Green Cooperative property. Playground and basketball court in foreground; community building in background.

Date: 1/19/94

Time: 1455

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 3

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: South

Description: Closeup of offsite background sample location SS01, on Eden Green Cooperative property, near southwest corner of 132nd Street and Indiana Ave.

Date: 1/19/94

Time: 1455

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 4

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: South

Description: Perspective view of offsite background sample location SS01, on Eden Green Cooperative property. Apartment buildings in background.

Date: 1/19/94

Time: 1515

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 5

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Southwest

Description: Closeup of sample location SS05, on Eden Green Cooperative property, east of 132nd Street and Indiana Ave., behind an Eden Green Cooperative sign, near apartment buildings.

Date: 1/19/94

Time: 1515

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 6

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Southwest

Description: Perspective view of sample location SS05, on Eden Green Cooperative property. Apartment buildings are in the background.

Date: 1/19/94

Time: 1615

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 7

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS21, on front lawn of W.E.B. DuBois Public School, near school entrance.

Date: 1/19/94

Time: 1615

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 8

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS21, on front lawn of W.E.B. DuBois Public School. School is in the background.

Date: 1/20/94

Time: 0800

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 9

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Closeup of sample location SS23, in southwestern section of Golden Gate Park, between a playground and basketball court.

Date: 1/20/94

Time: 0800

Photo Taken By: J.J. Noyes

Roll Number: 1

Photo Number: 10

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Perspective view of sample location SS23, in southwestern section of Golden Gate Park, between a playground and basketball court.

Date: 1/20/94

Time: 0905

Photo Taken By: M.A. Sanchez

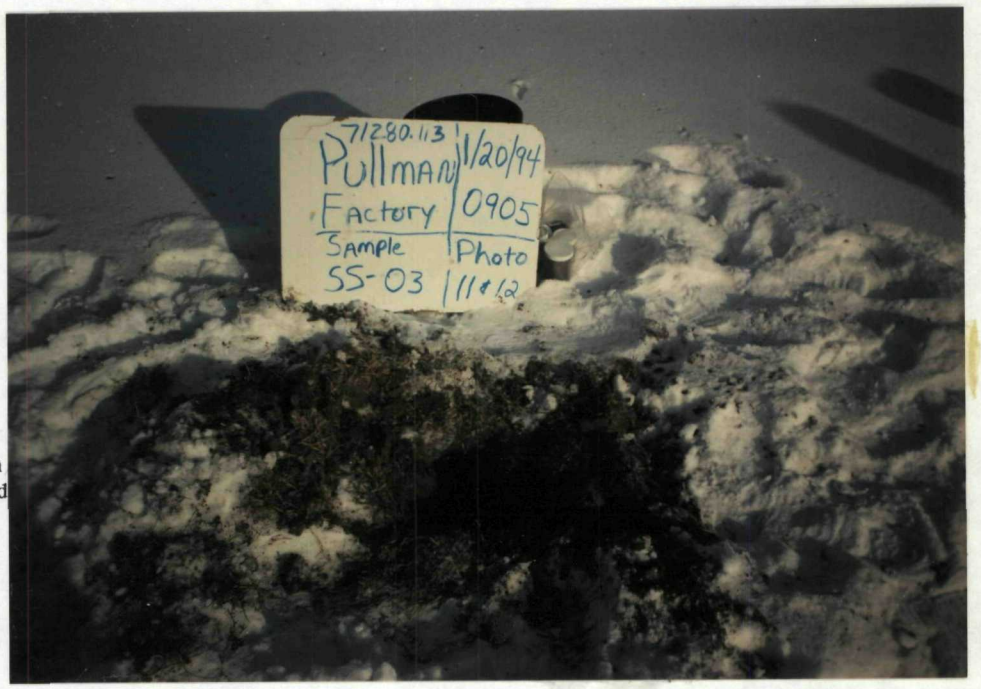
Roll Number: 1

Photo Number: 11

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Closeup of sample location SS03, in southwestern section of Concord Park Apartments property, in an open field, near a small play area and apartment buildings.



Date: 1/20/94

Time: 0905

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 12

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Perspective view of sample location SS03, in southwestern section of Concordia Park Apartments property. Small play area and an apartment building are in the background.

Date: 1/20/94

Time: 0950

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 13

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Southeast

Description: Closeup of sample location SS08, on front lawn of residence along Eberhart Ave, in northeastern section of the site.

Date: 1/20/94

Time: 0950

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 14

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Southeast

Description: Perspective view of sample location SS08, on front lawn of residence along Eberhart Ave. Residence is in the background.

Date: 1/20/94

Time: 1100

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 15

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS06, on front lawn of residence along 134th Street, in southwestern section of the site. Photo numbers shown on placard are incorrect.

Date: 1/20/94

Time: 1100

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 16

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS06, on front lawn of residence along 134th Street. Residence is in the background.

Date: 1/20/94

Time: 1120

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 17

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: West

Description: Closeup of sample location SS07, on front lawn of residence along 134th Street, in south-central portion of the site.

Date: 1/20/94

Time: 1120

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 18

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: West

Description: Perspective view of sample location SS07, on front lawn of residence along 134th Street. Residence is in the background.

Date: 1/20/94

Time: 1350

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 19

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS09, on front lawn of residence along Forrestville Ave., in northeastern section of the site.

Date: 1/20/94

Time: 1350

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 20

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS09, on front lawn of residence along Forrestville Ave. Residence is in the background.

Date: 1/20/94

Time: 1425

Photo Taken By: M.A. Sanchez

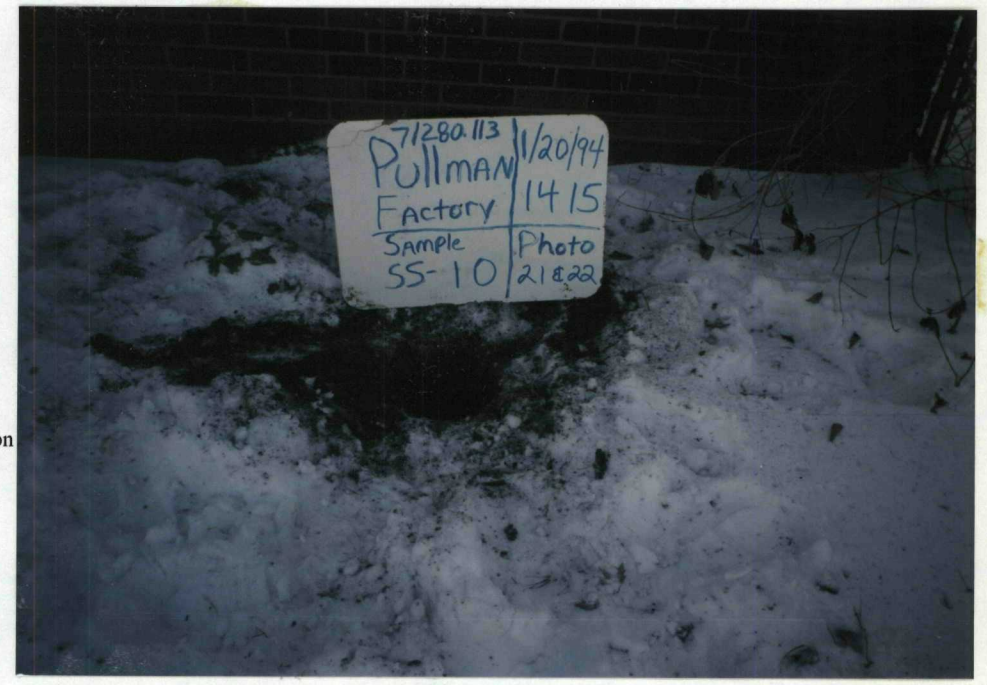
Roll Number: 1

Photo Number: 21

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: West

Description: Closeup of sample location SS10, on front lawn of residence along St. Lawrence Ave., in northeastern section of the site.



Date: 1/20/94

Time: 1425

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 22

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: West

Description: Perspective view of sample location SS10, on front lawn of residence along St. Lawrence Ave. Residence is in the background.

Date: 1/20/94

Time: 1520

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 23

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: South

Description: Closeup of sample location SS02, on northeastern section of Concordia Park Apartments property, in an open field, near a small play area and apartments. Time shown on placard is incorrect.

Date: 1/20/94

Time: 1520

Photo Taken By: M.A. Sanchez

Roll Number: 1

Photo Number: 24

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: South

Description: Perspective view of sample location SS02, on northeastern section of Concordia Park Apartments property. Small play area and an apartment building are in the background.

Date: 1/24/94

Time: 1030

Photo Taken By: M.A. Sanchez

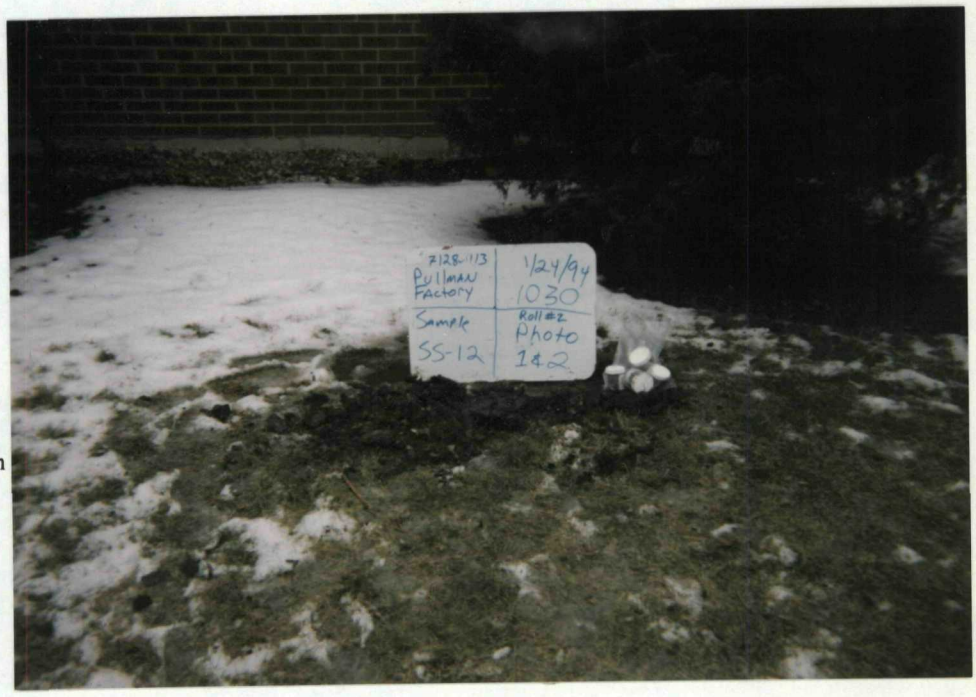
Roll Number: 2

Photo Number: 1

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: West

Description: Closeup of sample location SS12, on front lawn of residence along Vernon Ave., in central portion of the site.



Date: 1/24/94

Time: 1030

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 2

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: West

Description: Perspective view of sample location SS12, on front lawn of residence along Vernon Ave. Residence is in the background.

Date: 1/24/94

Time: 1140

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 3

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Southeast

Description: Closeup of sample location SS18, on Altgeld Gardens property east of the site, at southeastern corner of St. Lawrence Ave. and 131st Street, near an apartment building.

Date: 1/24/94

Time: 1140

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 4

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Southeast

Description: Perspective view of sample location SS18, on Altgeld Gardens property east of the site, at southeastern corner of St. Lawrence Ave. and 131st Street. Apartment building is in the background.

Date: 1/24/94

Time: 1200

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 5

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Closeup of sample location SS20, on Altgeld Gardens property east of the site, at the south end of a courtyard surrounded by apartment buildings.

Date: 1/24/94

Time: 1200

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 6

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Perspective view of sample location SS20, on Altgeld Gardens property east of the site, at the south end of a courtyard surrounded by apartment buildings.

Date: 1/24/94

Time: 1235

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 7

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Closeup of sample location SS19, on Altgeld Gardens property east of the site, in an open field surrounded by apartment buildings and a play ground, east of the intersection of 132nd Street and St. Lawrence Ave.

Date: 1/24/94

Time: 1235

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 8

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Perspective view of sample location SS19, on Altgeld Gardens property east of the site, in an open field. Playground and apartment buildings are in the background.

Date: 1/24/94

Time: 1455

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 9

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Closeup of sample location SS14, on front lawn of residence along 134th Street, in the southeastern section of the site.

Date: 1/24/94

Time: 1455

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 10

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Perspective view of sample location SS14, on front lawn of residence along 134th Street. Residence is in the background.

Date: 1/24/94

Time: 1553

Photo Taken By: M.A. Sanchez

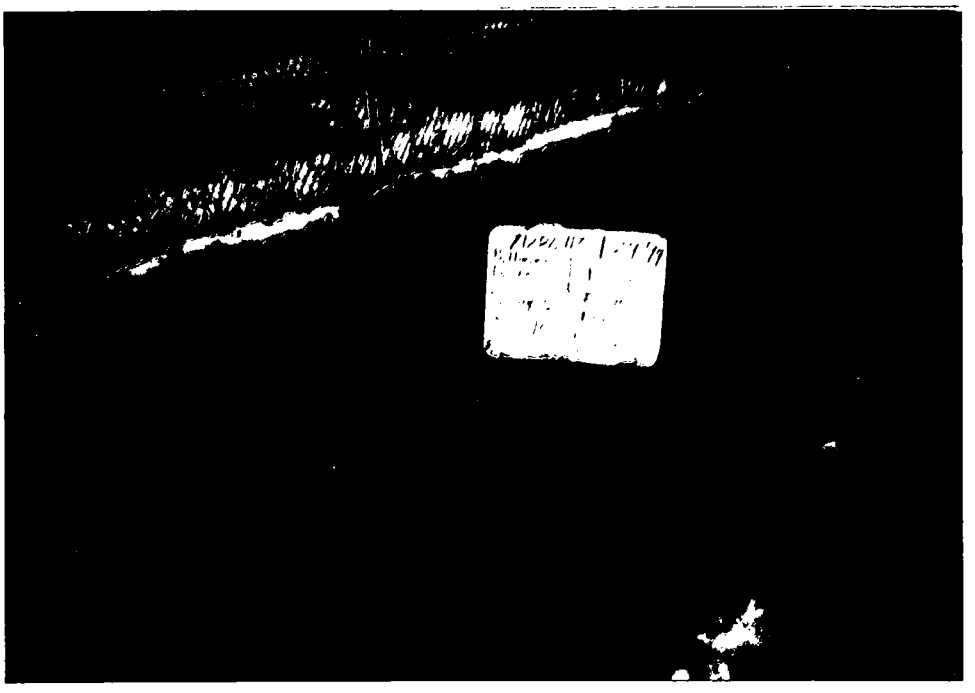
Roll Number: 2

Photo Number: 11

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS15, on front lawn of residence along St. Lawrence Ave., in the southeastern section of the site.



Date: 1/24/94

Time: 1553

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 12

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS15, on front lawn of residence along St. Lawrence Ave. Residences are in the background.

Date: 1/24/94

Time: 1630

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 13

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS13, on front lawn of residence along Forrestville Ave., in the southeastern section of the site.

Date: 1/24/94

Time: 1630

Photo Taken By: M.A. Sanchez

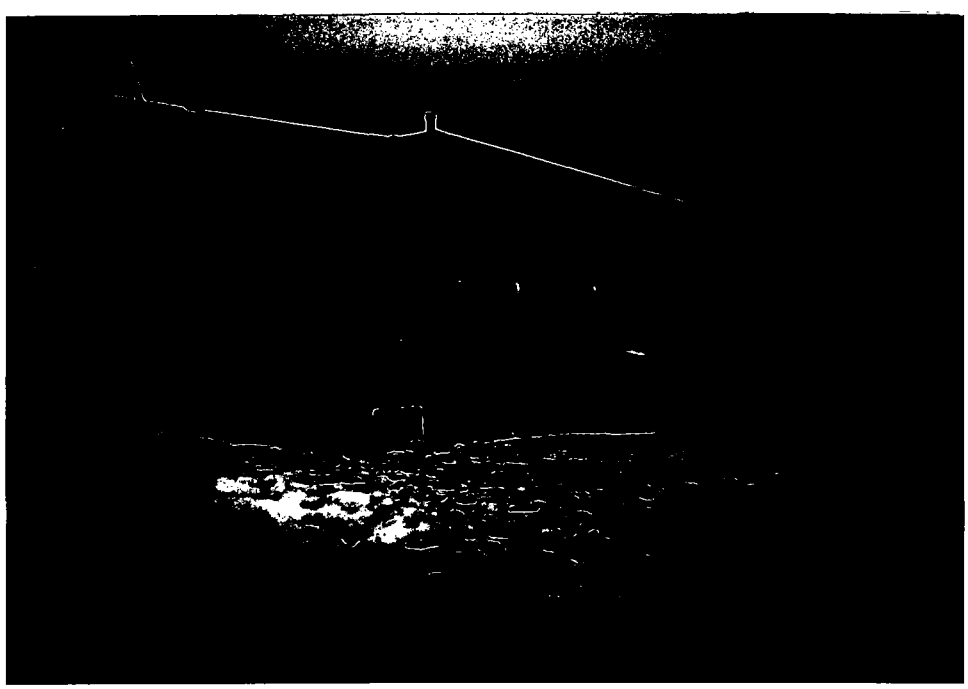
Roll Number: 2

Photo Number: 14

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS13, on front lawn of residence along Forrestville Ave. Residence is in the background.



Date: 1/24/94

Time: 1650

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 15

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS11, on front lawn of residence along Eberhart Ave., in the central portion of the site. Photo did not develop.

Date: 1/24/94

Time: 1650

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 16

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS11, on front lawn of residence along Eberhart Ave. Residence is in the background. Photo did not develop.

Date: 1/25/94

Time: 0900

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 17

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Closeup of sample location SS16, on side lawn of residence along 134th Street, just outside the southern site boundary.

Date: 1/25/94

Time: 0900

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 18

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Perspective view of sample location SS16, on side lawn of residence along 134th Street, just outside the southern site boundary.

Date: 1/25/94

Time: 1000

Photo Taken By: M.A. Sanchez

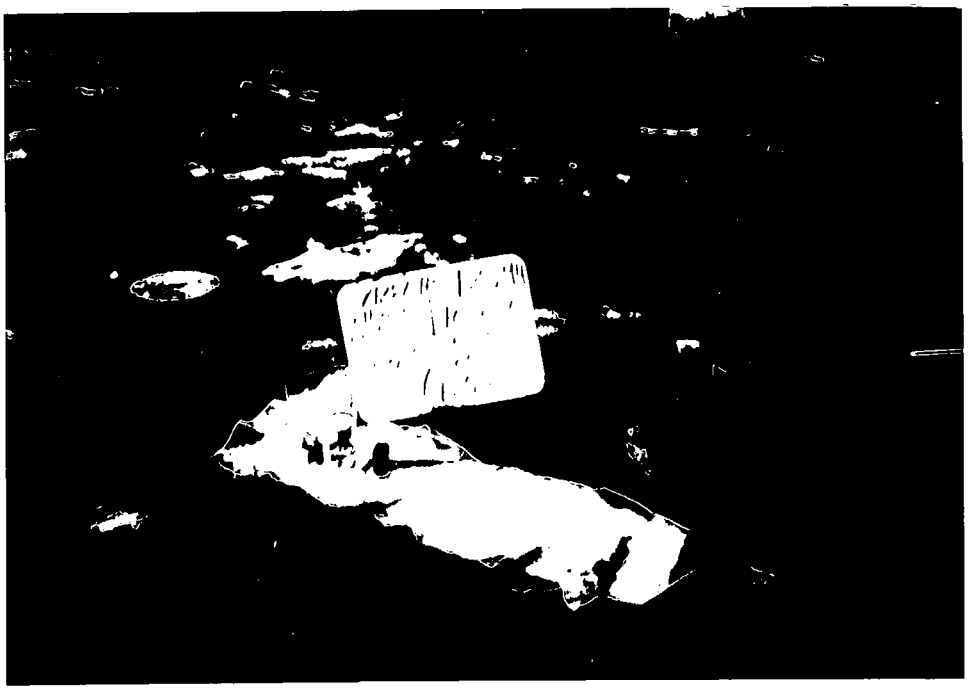
Roll Number: 2

Photo Number: 19

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Closeup of sample location SS17, on front lawn of residence along 134th Place, just outside the southeast corner of the site. Photo numbers shown on placard are incorrect.



Date: 1/25/94

Time: 1000

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 20

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Perspective view of sample location SS17, on front lawn of residence along 134th Place, just outside the southeast corner of the site. Residence in background.

Date: 1/25/94

Time: 1100

Photo Taken By: J.J. Noyes

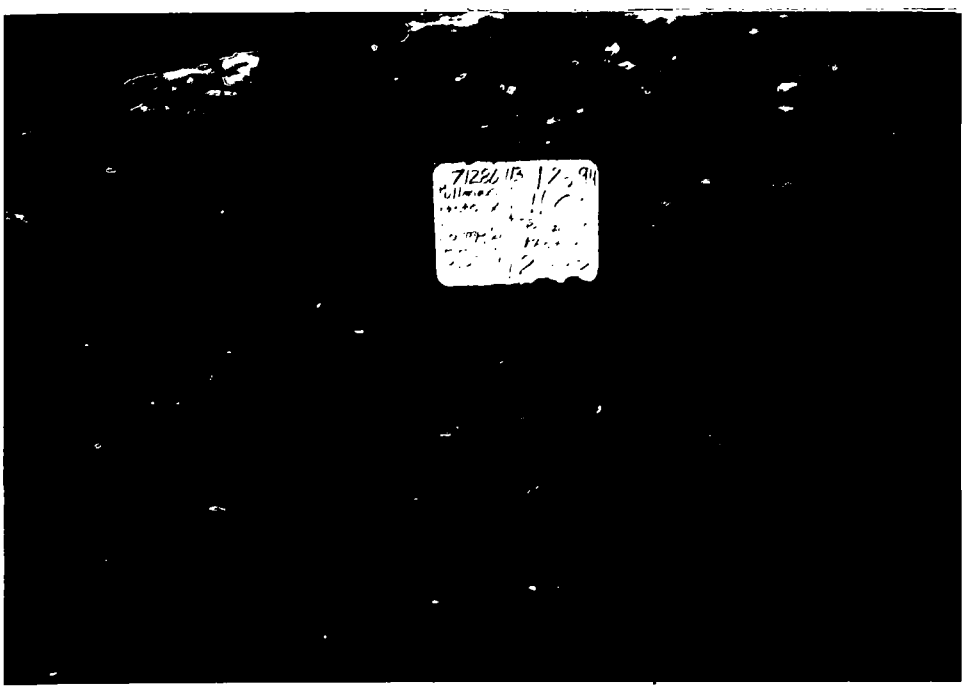
Roll Number: 2

Photo Number: 21

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northeast

Description: Closeup of sample location SS22, on front lawn of the Ira F. Aldridge Elementary School, just east of the site.



Date: 1/25/94

Time: 1100

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 22

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northeast

Description: Perspective view of sample location SS22, on front lawn of the Ira F. Aldridge Elementary School, just east of the site. School is in left portion of photo.

Date: 1/24/94

Time: 1553

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 11

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS15, on front lawn of residence along St. Lawrence Ave., in the southeastern section of the site.

Date: 1/24/94

Time: 1553

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 12

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS15, on front lawn of residence along St. Lawrence Ave. Residences are in the background.

Date: 1/24/94

Time: 1630

Photo Taken By: M.A. Sanchez

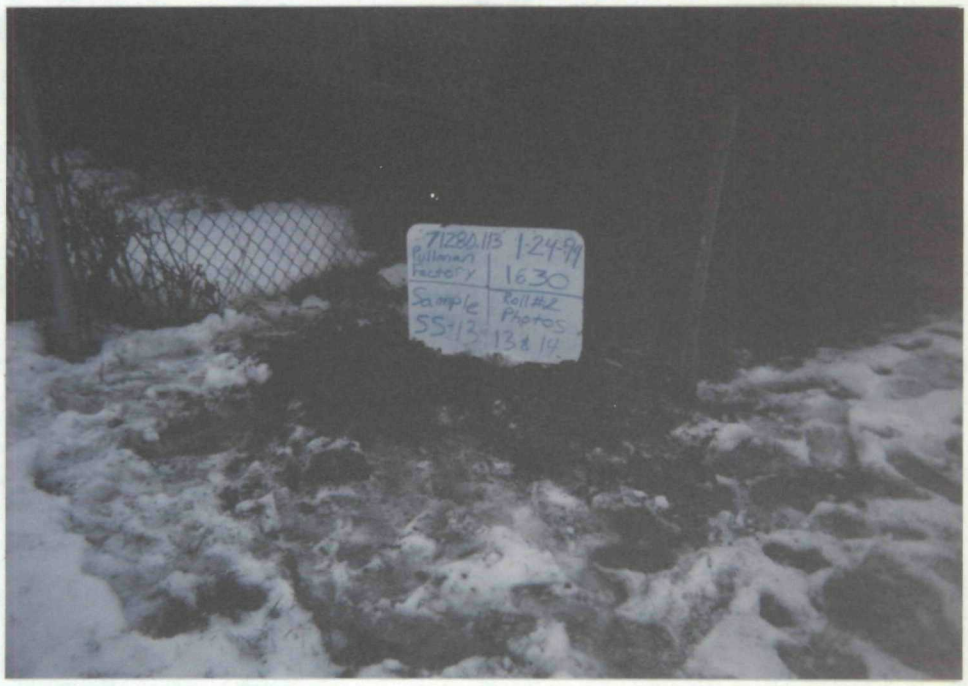
Roll Number: 2

Photo Number: 13

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS13, on front lawn of residence along Forrestville Ave., in the southeastern section of the site.



Date: 1/24/94

Time: 1630

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 14

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS13, on front lawn of residence along Forrestville Ave. Residence is in the background.

Date: 1/24/94

Time: 1650

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 15

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Closeup of sample location SS11, on front lawn of residence along Eberhart Ave., in the central portion of the site. Photo did not develop.

Date: 1/24/94

Time: 1650

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 16

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northwest

Description: Perspective view of sample location SS11, on front lawn of residence along Eberhart Ave. Residence is in the background. Photo did not develop.

Date: 1/25/94

Time: 0900

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 17

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Closeup of sample location SS16, on side lawn of residence along 134th Street, just outside the southern site boundary.

Date: 1/25/94

Time: 0900

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 18

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: East

Description: Perspective view of sample location SS16, on side lawn of residence along 134th Street, just outside the southern site boundary.

Date: 1/25/94

Time: 1000

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 19

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Closeup of sample location SS17, on front lawn of residence along 134th Place, just outside the southeast corner of the site. Photo numbers shown on placard are incorrect.

Date: 1/25/94

Time: 1000

Photo Taken By: M.A. Sanchez

Roll Number: 2

Photo Number: 20

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: North

Description: Perspective view of sample location SS17, on front lawn of residence along 134th Place, just outside the southeast corner of the site. Residence in background.

Date: 1/25/94

Time: 1100

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 21

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northeast

Description: Closeup of sample location SS22, on front lawn of the Ira F. Aldridge Elementary School, just east of the site.

Date: 1/25/94

Time: 1100

Photo Taken By: J.J. Noyes

Roll Number: 2

Photo Number: 22

Location/ILD #: Pullman Factory, Chicago, IL / ILD 981 959 208

Direction of Photo: Northeast

Description: Perspective view of sample location SS22, on front lawn of the Ira F. Aldridge Elementary School, just east of the site. School is in left portion of photo.